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THE SCOPE of this journal is broad, covering the whole field of education and its relation to the social order.

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Teachers College
RECORD

January, 1929

DETERMINING BASIC READING MATERIALS THROUGH A STUDY OF CHILDREN'S INTERESTS AND ADULT JUDGMENTS

By HERBERT B. BRUNER
Associate in Curriculum Research, Teachers College

WHAT do children like to read? What reading materials do teachers think most appropriate for children? Should children be encouraged to read only that which catches their fancy, or should they be exposed to materials adults think worthwhile? These and similar questions raise a network of problems concerning reading materials. Solutions to many of these have been sought by course-of-study makers, textbook writers, research workers, and individual teachers.

That course-of-study makers, during the past five years, have generally placed a greatly increased emphasis upon the use of engaging child experiences is indicated by a recent survey of 15,000 elementary school courses of study published during the period 1915-28.[1]

Although it is almost universally admitted that children enter with more happiness and a higher degree of success into those activities which to them are intrinsically appealing, few would be willing to accept child interest as the sole criterion for determining all curriculum materials. The present trend would seem to be in the direction

[1] Stratemeyer, Florence B., and Bruner, Herbert B. *Judged Outstanding Courses of Study.* In preparation.

of approving materials which are not only interesting to children but receive also the sanction of competent adults.

In an attempt to prepare and select reading materials measuring up to this twofold standard—interest and appropriateness—the experiment briefly described in this article was set up and carried through Grades 1 to 6 by Mary E. Pennell, formerly Assistant Superintendent of Schools, Kansas City, Missouri; Alice M. Cusack, Primary Supervisor, Kansas City, Missouri; and the writer, with the coöperation of 1500 teachers, 50,000 children, over a hundred student critic teachers and some interested parents.

PHASE 1: STUDYING THE SPONTANEOUS QUESTIONS OF CHILDREN

The first phase of the experiment was concerned with determining the interests of children as evidenced by their spontaneous questions asked on the playground, at home, in the classroom, or wherever children could be observed. Blanks on which to record such questions, and the stimuli which evoked them, were sent to teachers, members of parent-teacher organizations, and normal school student teachers in various parts of the country. These questions and stimuli were then studied with a view to determining which, from an adult point of view, should be encouraged and fostered in order to develop the child individually and to advance society as a whole.

PHASE 2: STUDYING THE REACTIONS OF CHILDREN TO QUESTIONS FORMULATED BY SPECIALISTS

Children's experiences are limited and their surroundings may not be such as to arouse a sufficient range of worthwhile interests. Hence, it is obvious that many promising interests might not be discovered through the procedure employed in Phase 1. Therefore, an attempt was made to determine the interests of children by reversing this procedure. A specialist in each of several important fields of human experience as well as subject matter departments of the school was requested to prepare one hundred questions, the answers to which contained information which in his judgment (1) was most desirable, (2) would be most interesting to children, and (3) was not adequately presented in existing materials which children could understand. These questions were then submitted to approximately 12,000 fourth, fifth, and sixth grade children, representing various degrees of intelli-

gence and social status, from rural, village, and city school systems well-distributed geographically. The children were asked to indicate those questions they would like best to have answered and those in which they were least interested. Following are listed the fields, the names of the specialists, and the three highest and three lowest ranking questions in each list:

Civics

Prepared by Roy W. Hatch, Head of the Department of Social Science, New Jersey State Teachers College, Upper Montclair, New Jersey.

Highest Ranking

A boy was born on a German steamship within the three-mile limit of the coast of France. His parents were English. What is the citizenship of the boy?

Benjamin Franklin was one of the kind of citizens who said, "What can I do?" What were some of the useful things this citizen did?

How does Europe's way of fighting fires compare with America's way? Why is there a larger loss by fire in the United States than in Europe?

Lowest Ranking

Who may and who may not vote in your state?

How does a good citizen regard the sign, "Keep Off the Grass"?

Can a city or town do just what it pleases?

Elementary Science and Nature Study

(Double list. Two hundred questions were submitted in the field of elementary science.)

Prepared by Samuel R. Powers, Professor of Natural Sciences, Teachers College, Columbia University.

Highest Ranking

What makes shooting stars shoot? Where do they go when they fall?

What causes earthquakes?

Who invented talking?

How does the air bring the sounds to a radio?

Is Mars inhabited?

How do victrolas get the sound in them?

Lowest Ranking

Why do we need soil and water for our plants?

What makes the trees grow?
What makes the ground poor in some places and rich in others?
How is soil formed?
How do plants (pussy willows, vegetables, flowers, grass) grow?
What makes the grass green?

Geography

Prepared by Erna Grassmuck, formerly Director of Geography, Pennsylvania State Department of Education.

Highest Ranking

Which fruit do you like best: cranberries, bananas, dates, oranges, raisins, or prunes? Tell where it comes from and how it grows.
What makes a trip across a big desert thrilling but dangerous?
What is meant by the Midnight Sun? Where would you go to see it?

Lowest Ranking

Why is wheat not raised in Maine?
Why do cities grow up around large manufacturing plants?
Why is cotton not grown in South Dakota?

History

Prepared by Roy W. Hatch, Head of the Department of Social Science, New Jersey State Teachers College, Upper Montclair, New Jersey.

Highest Ranking

Of whom was this written?

"A man went down to Panama
Where many a man had died,
To slit the sliding mountains
And lift the eternal tide.
A man stood up in Panama
And the mountains stood aside."

Would you like to know the story of "The Fool, the Frying Pan, and the Fire"?
You have all heard of the ride of Paul Revere. Would you like to know of the much longer and more famous ride of Marcus Whitman?

Lowest Ranking

Why should there be so much discussion about immigration?
How does a combined harvester and thresher actually work?
How did it happen that men of one nationality explored for another nation?

Hygiene

Prepared by Jesse F. Williams, M. D., Professor of Physical Education, Teachers College.

Highest Ranking

Why should one sleep with the windows open, summer and winter?
What should one do to give first aid to a person saved from drowning?
Why are people asked to face the doors when riding in an elevator?

Lowest Ranking

Why should I not eat between meals and why should I eat candy only at meal times?
What makes one tired? How can one become rested?
Why do my parents ask me to eat whole wheat bread?

Industrial Arts

Prepared by Frederick G. Bonser, Professor of Education, Teachers College.

Highest Ranking

How did we get our alphabet?
How do cameras, stereoscopes, stereopticons, and moving picture machines work?
What different kinds of airships are there, what are they used for, and what keeps them from falling to the ground?

Lowest Ranking

What different kinds of baskets are used in different parts of the world, and of what and how are they made?
How are we supplied with fresh fruits and vegetables not grown in our own community?
What do people in different parts of the world use for wall coverings and wall decorations?

Safety Education

Prepared by Ruth Streitz, Associate Professor of Education, University of Cincinnati, Cincinnati, Ohio.

Highest Ranking

Why did President Coolidge set aside October 9 as National Fire Prevention Day?
Do you know what is meant by Grade A, Grade B, and Grade C milk? Which grade should you buy to drink, and which for cooking?

How can you rescue a person who has fallen through a hole in the ice if the ice is not firm enough for you to stand on it?

Lowest Ranking

Do intelligent people use a rocking chair or a stepladder in order to reach things?

Why should rubbish never be burned in the fireplace?

How do fires "start by themselves"?

The ranks assigned to the various questions give rise to some interesting conjecture. Undoubtedly various factors, such as the way in which the question was framed, the amount of prior information possessed by the pupils, and the like, influenced the choices made.

PHASE 3: PREPARING MATERIALS TO SATISFY INTERESTS DETERMINED IN PHASES 1 AND 2

The third phase of the experiment consisted in preparing reading materials which, in the judgment of adults, most nearly satisfied the interests expressed in (1) the spontaneous questions resulting from the procedure employed in Phase 1 of the experiment, and (2) the choices of questions to be answered resulting from the procedure employed in Phase 2. For example, in Phase 1 several children asked the question, "How could I help someone who has just been saved from drowning?" In Phase 2 children indicated great interest in the answer to the question, "What should one do to give first aid to a person saved from drowning?" Material was written to satisfy these interests under the title, "The Swing Over the Swimming Pool." The reading material so prepared has been termed in this discussion, "informational." It was prepared in three different forms: (1) story form with a highly dramatic element, such as that in "The Swing Over the Swimming Pool" and "The Red Sweater's Service"; (2) story form without the highly dramatic element, such as that in "A Shooting Star" and "The Tutor From the North"; and (3) descriptive form in which no attempt was made to arrange the material in story form or in episodes, such as that in "The Flowers of Greenland" and "The Wonder of Sound." The facts involved in all the informational material were carefully checked by specialists in the fields covered and in no case were they distorted in any way for the sake of the story element.

PHASE 4: DETERMINING THROUGH ADULT JUDGMENT THE MOST APPROPRIATE LITERARY PROSE SELECTIONS

In a study made during the year 1925-26[2] and supplemented by further investigations in 1927-28, 2913 courses of study in reading, language and grammar, and literature were ranked for curriculum merit. For each grade from the second to the sixth a list was made of the prose literary selections most frequently mentioned in the fifty courses of study judged by the preceding investigation to be outstanding in each of the fields of literature, reading, and language and grammar. Another list was set up which was composed of the prose literary selections mentioned most frequently in a random sampling of all the 2913 courses. This list was combined with selections found in basal readers mentioned in all published state courses of study. For the second and third grades a third list was prepared. This consisted of prose selections based on a frequency count of the selections mentioned in the basal readers listed in the ten courses of study in reading which had been rated as most outstanding.

The most and least frequently mentioned selections in these three studies, together with a list of recently written selections not included in the above studies, were then submitted to committees. These committees chose those selections which in their judgment would seem to be most appropriate for a course of study in reading. In the second and third grades the committee consisted of a primary supervisor, the head of a kindergarten-primary department in a state university, a teacher of primary methods in a normal college, an assistant superintendent, two field supervisors, and a critic teacher in a normal college. In the fourth, fifth, and sixth grades a children's librarian, an editor of children's literature, an assistant superintendent of schools, a primary supervisor, and a director of curriculum revision constituted the committee.

PHASE 5: DETERMINING THROUGH CLASSROOM EXPERIMENTATION THE INTEREST AND APPROPRIATENESS OF THE LITERARY AND INFORMATIONAL MATERIALS

Phase 5 of the experiment consisted in assembling in experimental books the informational and literary selections for which copyrights

[2] *Rating Elementary School Courses of Study.* Stratemeyer, Florence B., and Bruner, Herbert B. Bureau of Publications, Teachers College, Columbia University.

were available, and submitting these (1) to children, in order to determine which were the most interesting, which least appealing, and why, and (2) to teachers, in order to secure their estimates as to the appropriateness of the materials. Seven such experimental books were printed—a primer, and a reader for each of the first six grades. As nearly as possible these books were printed in the form in which basic reading materials for children are ordinarily presented.

ADMINISTRATION OF THE EXPERIMENT

The experiment was conducted over a period of two years, beginning October, 1926. The fifteen hundred coöperating teachers were in centers selected on account of the willingness and interest of the officers in charge of the school systems, and the ability of the teachers to carry the experiment through according to directions. The coöperating centers were:

Beaumont, Texas
Boise, Idaho
Cameron, Texas
Cleveland, Ohio
Cozad, Nebraska
Durant, Oklahoma
Fort Smith, Arkansas
Garrett County, Maryland
Georgetown, Texas
Greenville, Mississippi
Houston, Texas
Jackson, Michigan
Junction City, Kansas
Kansas City, Missouri
Marshall, Missouri
Muskogee, Oklahoma
Okmulgee, Oklahoma
Port Arthur, Texas
Providence, Rhode Island
Sargent, Nebraska
Sault Ste. Marie, Michigan
Seattle, Washington
Taylor, Texas
Walden, New York
Wilson, Oklahoma

Farmville State Teachers College, Farmville, Virginia
Harris Teachers College, St. Louis, Missouri
Maryland State Normal School, Towson, Maryland
New Jersey State Teachers College, Upper Montclair, New Jersey
Nebraska State Normal College, Chadron, Nebraska
Nebraska State Normal School and Teachers College, Peru, Nebraska
Northeastern State Teachers College, Tahlequah, Oklahoma
Richmond Normal School, Richmond, Virginia
Southeastern State Teachers College, Durant, Oklahoma
Teachers College of Kansas City, Kansas City, Missouri
University of Nebraska, Lincoln, Nebraska

The amount of participation in the experiment varied. In some communities the entire school system coöperated in every phase, while in others only one or two classes worked with the materials, or only one phase of the experiment was undertaken.

A study of this list indicates that the experiment was conducted in widely distributed centers, which ranged in size from the one-room rural school to the metropolitan city. The experimental books were placed in the hands of a sufficient number of underprivileged, superior, foreign, and normal children to guarantee the typicalness of the results.

Experimental conditions were made more uniform by supplying each coöperating teacher with suggestive methods for presenting the material. In preparing these suggestions an attempt was made to utilize the most generally accepted principles of philosophy and proved educational psychology. In order that the constancy of the experimental conditions might be still further safeguarded, a director of the experiment was chosen in each center, and uniform books of directions and blanks for reporting results were placed in the hands of each coöperating teacher in Grades 1 to 6. In addition, uniform blanks for reporting their own preferences were supplied to all children in Grades 2 to 6 inclusive. The local director of the experiment was in most cases either a supervisor, the director of research, or the superintendent of schools.

The plan of experimentation consisted in general in having the pupil come in contact with a certain number of selections, and in checking (1) to see which selection interested him most, and which least, and (2) to determine which selections the teachers thought most appropriate. In Grades 4, 5, and 6, sixty selections were presented to each pupil, 36 of which were literary and 24 informational. The sixty selections were divided into blocks of five. These blocks contained both informational and literary selections. After each five were presented the pupil chose the selection he liked best and the one he liked least, giving the reasons for his choices. In order that the element of frequency might be taken account of, the pupil was asked after each fifteen selections to choose the three he liked best and the three he liked least. After each thirty selections had been presented, the teacher indicated the six she considered most appropriate, and the six she judged least appropriate. The final score given each selec-

tion was a composite derived from the number of pupil choices and teacher judgments it received. The score was so weighted as to represent 1,000 pupil choices and 100 teacher judgments.[3]

Another feature of the experiment was concerned with determining whether or not the usual grade placement of the materials utilized in the experiment was sound, according to the criteria employed. Hence, materials prepared for the fourth grade were tried out in the third, fourth, fifth, and sixth grades, those for the fifth grade in the fourth, fifth, and sixth grades, and those for the sixth grade in the fourth, fifth, sixth, and seventh grades.

Of the 153 selections utilized in the part of the experiment which was conducted to determine placement of materials in Grades 4, 5, and 6, sixty were used in the third grade, 153 in each of the fourth, fifth, and sixth grades, and 60 in the seventh grade. Of these 153 selections, 41 were selections chosen from a list of those most frequently used in courses of study and textbooks, 67 were chosen from lists of selections least frequently used in courses of study and textbooks, and 45 were new, so-called informational material, which in the form used had never been included in courses of study and textbooks.

In that part of the experiment in which reading selections were submitted to pupils and teachers, the aim was to determine from an already highly selected list of materials those which were most appealing to children and seemed most appropriate to teachers when tried out in typical classroom situations. While it is admitted that various factors of conditioning must have been operative in different classrooms, the large number of children and teachers involved, the precautions taken in preparing the materials, and the directions and blanks for reporting choices, as well as the care exercised in selecting the individuals who conducted the local experimentation, would seem to argue for the validity of the results.

RESULTS OF THE EXPERIMENT

In this section are presented the results of the experiment for normal children in Grades 4, 5, and 6 only. In Tables I to III are listed the selections which received the highest composite scores in these grades. For example, "Joan of Arc" appears under Grade 4, since the

[3] Thanks are due to Dr. J. Ralph McGaughy, Professor of Education, Teachers College, for checking the statistical methods employed in the experiment.

composite score based on the likes of children and the estimates of teachers as to appropriateness was higher in this grade than in any other. In Column 1 of these tables appears the grade in which the selection was placed in the experimental books. In Column 2 is given the name of the selection itself. Selections unmarked are informational, those marked with an asterisk are literary prose selections most frequently appearing in courses of study and textbooks, while those marked with a double asterisk are literary prose selections least frequently appearing in courses of study and textbooks. In Column 3 is given the rank of the selection in the grade where it received a higher score than in any other grade, and in Column 4 the percentile score of the selection within that grade is given. Column 5 indicates the grade in which the selection received its second highest ranking, and Column 6 its rank within that grade. Column 7 indicates the grade in which the selection received its third highest ranking, and Column 8 the rank within that grade.

A study of Tables I to III leads to some interesting observations and conclusions, a few of which are discussed here.

1. *Selections Ranking High in All Three Grades.* Of the 153 selections presented, the 10 having the highest average rank in the three grades are listed in Table IV.

It is interesting to note that nine of these selections come from those appearing least frequently in courses of study and textbooks, and one, "The Swing Over the Swimming Pool," is an entirely new selection of the informational type. Not one of the most frequently used literary prose selections appears in the list of the highest ranking ten.

2. *Selections Ranking Low in All Three Grades.* In Table V are listed the 10 selections receiving the lowest average rank in Grades 4, 5, and 6.

These are all of the descriptive type of informational selection with the exception of "Makers of the Flag," which comes from the list of least frequently used literary selections. No literary selections of the most frequently used type or informational selections of the story and dramatic type appear in this list.

In Table VI are listed the 10 lowest ranking literary selections of those most frequently used in courses of study and textbooks.

In Table VII are listed the 10 lowest ranking literary prose selec-

TABLE I

SELECTIONS RECEIVING A HIGHER RANK IN GRADE 4 THAN IN ANY OTHER GRADE
(*Of 153 Selections Presented*)

1	2	3	4	5	6	7	8
Grade in which selection appeared in experimental books	Name of Selection	Rank in Grade 4	Percentile in Grade 4	Grade in which selection received its second highest rank	Rank in second highest grade	Grade in which selection received its third highest rank	Rank in third highest grade
6	Joan of Arc**	1	100.0	5	2	6	7
5–6	The Swing Over the Swimming Pool	2	89.5	5	4	6	5
5	Ali Baba and the Open Sesame*	6	81.0	5	16	6	19
6	Stories of King Arthur*	7	77.2	5	24	6	60
6	The Happy Prince**	9	75.0	6	9	7	10
5	Robinson Crusoe*	10	72.6	5	54	6	61
5	Gulliver's Travels*	11	72.2	6	17	5	26
4	Going for the Doctor**	15	66.1	5	20	6	21
6	Daniel Boone and the Founding of Kentucky**	16	65.2	5	27	6	28.5
4	Rumpelstiltskin*	18	58.5	5	37	6	41
4	William Tell*	20	56.5	3	28	5	29.5
5	Aladdin and the Wonderful Lamp*	21	55.0	6	25	5	41
5	Pandora*	25	52.0	5	46	6	51
6	Rip Van Winkle*	26	50.7	6	33.5	5	35
4	Barbara's Basket of Fruit	29	48.2	3	41	6	48
6	Roland and Oliver*	34	47.3	5	38	6	84
5	Robin Hood*	35	47.2	5	51	6	53
5	The Rat That Could Speak*	38	45.0	6	49	5	60
4	Pomegranate Seeds*	52	37.9	3	56	6	87.5
6	The Adventures of Ulysses*	56	35.0	7	61	5	69
6	The Only Lion Farm in the World**	60	31.9	7	64	5	67
6	The Unknown Soldier**	66	28.1	5	76	6	85
5	Thor's Wonderful Journey*	68	27.3	6	72	5	84
5	Bill Brown's Test**	70	26.1	6	75	5	82
6	Pioneering in the Air	72	25.8	6	78	5	92
4	The Grizzly's Sly Little Joke**	73.5	25.0	5	79	6	91
5	The Measure of Rice**	84	19.7	6	95	5	102
5	The Pine-Tree Shillings*	86	18.9	6	93	5	99
4	Jackanapes and the Pony**	90.5	17.5	5	93	6	104
6	Washington and the American Army*	90.5	17.5	7	127	6	133
4–5	The Man Who Said, "What Can I Do?"	93	16.2	3	97	6	102
5	Lincoln as a Boy*	98	15.1	5	100	6	124.5
4	The Arab and the Camel*	103	14.1	6	111	3	132
5	The Little Blue Fox**	105	13.9	6	141	5	144
6	Music-Loving Bears**	110	12.8	7	117	6	130
5	In the Elevator	118	11.9	5	128.5	6	134
4–5–6	The Fires That Need Not Have Happened	123	10.1	7	123.5	6	137
5	The Grasslands That Help to Feed the World	138	7.5	5	141	6	146
5	The Flowers of Greenland	146.5	5.9	6	149	5	150

TABLE II

SELECTIONS RECEIVING A HIGHER RANK IN GRADE 5 THAN IN ANY OTHER GRADE
(*Of 153 Selections Presented*)

1	2	3	4	5	6	7	8
Grade in which selection appeared in experimental books	Name of Selection	Rank in Grade 5	Percentile in Grade 5	Grade in which selection received its second highest rank	Rank in second highest grade	Grade in which selection received its third highest rank	Rank in third highest grade
5	Ill-Luck and the Fiddler** ...	1	100.0	6	3	4	3
5	The Snow Battle**	7	84.0	4	8	6	14
4	The Angry Polar Bear**	11	72.8	3	13	4	31
6	The Legend of Sleepy Hollow*	13	69.3	6	24	4	43
4	Pinocchio*	15	67.0	4	24	3	31
5	Fighting the Fire Monster** ..	19	60.4	6	27	4	28
4	Allarm**	29.5	51.5	3	36	6	56
4	The Little Furry Ones That Slide Down Hill**	39	43.2	4	42	6	42
5	Glory Goldie's Fishing**	40	42.8	4	45	6	50
6	The "Great White Doctor" of Africa**	43	42.1	6	44	7	56
6	General Robert Edward Lee**	52	35.4	4	67	7	69
5	What Happened One St. John's Day**	55	33.7	4	71	6	73
5	Heroism in 1925**	61	31.2	6	66	4	88
4	Fighting a Depth Bomb**	64	29.0	4	73.5	6	81
4	The Emperor's New Clothes**	68	26.5	3	70	4	97
4	Rolling with the Hooksie Men**	77	23.6	6	91	4	101
4	The Leaping Match**	85	20.8	4	94	6	96
5	Capturing the Wild Horse** ..	86	20.5	4	87	6	107
6	A Close Election	91	18.6	7	112	4	152
5	The American Boy**	108	12.3	4	117	6	117.5
5	The Crossing**	110	11.6	6	113	4	125
5	"The Fool, the Frying Pan and the Fire"	112	11.2	6	120	4	140
5	Peril in the Grand Canyon** .	113	10.9	6	127	4	134
5	Hard Lessons*	119	9.3	4	124	6	138
5	With the Help of Guinea Pigs .	120	8.7	4	120.5	6	140
5	How the Blackstick Was Not Asked to Princess Angelica's Christening**	121	8.7	4	126	6	129
4	A Handful of Clay**	125	8.3	3	125	6	128
5	The Keyland of Central Europe	130	7.8	4	132.5	6	136

TABLE III

Selections Receiving a Higher Rank in Grade 6 Than in Any Other Grade

(Of 153 Selections Presented)

1	2	3	4	5	6	7	8
Grade in which selection appeared in experimental books	Name of Selection	Rank in Grade 6	Percentile in Grade 6	Grade in which selection received its second highest rank	Rank in second highest grade	Grade in which selection received its third highest rank	Rank in third highest grade
5	Wolf, the Faithful Collie** ...	1	100.0	5	3	4	4
5	Billy, the Dog That Made Good**	2	86.4	5	5	4	14
5	The Little Cabin Boy**	4	77.7	4	5	5	6
5	Chi-Wee and the Rabbit** ...	6	71.6	5	8	4	17
6	Cheating the Flames**	8	68.5	5	10	4	12
4	The Porcelain Stove*	10	61.0	4	19	5	32
6	The Red Sweater's Service ...	11	60.3	7	20	5	21
4	The Magic Prison**	13	58.7	3	20	5	22
6	Molly in Her Element**	16	55.3	5	25	7	31
4	The Charcoal Burner**	20	52.0	5	33	3	43
4	A Silent Heroine**	22	48.9	5	31	3	38
5	Sergeant York of Tennessee** .	26	42.2	5	42	4	62
5	Moni the Goat Boy*	31	39.8	5	44	4	61
6	Raymond Remembers the Rules	32	39.5	4	44	5	53
5	Sindbad the Sailor*	33.5	39.1	4	47	5	56
4	Frightening the Indians**	36	38.1	4	46	3	51
6	One Finger and a Paddle	37	37.7	7	41	4	54
4	A Dog of Flanders*	38	37.2	4	41	5	47
4	Florence Nightingale**	40	35.5	5	49	4	51
6	Where Love Is, There God Is Also*	46	33.2	5	48	4	58
5	Hunting with a Camera**	54.5	27.0	5	65	4	92
4	Damon and Pythias*	57	26.7	5	59	4	64
4	On the Farm**	59	26.3	4	83	5	87
6	A Fall on the Rocks	64	25.2	4	65	5	72
6	The Story of the Salmon** ...	68	23.1	5	71	4	77
4	How the Chipmunk Got Its Stripes*	76	20.6	4	109	5	109
5	The Wary Wolf**	79	18.8	5	88.5	4	116
6	A Strange Preparation for the New Year**	86	15.8	5	116	4	119
5–6	Some Great Buildings of the World	87.5	15.5	5	96	4	112
4	The Story of the Milk Cap ...	90	14.9	5	97	3	102
4–5	The Tutor from the North ...	94	13.7	5	118	3	135
5	Boy Life on the Prairie**	98	13.5	5	105	4	107
5–6	A Friend in the Sky	103	12.5	5	103	4	106
4–5–6	How We Got Our ABC's and XYZ's	114	9.5	4	120.5	5	123.5
6	Man's Ways of Making Music	114	9.5	5	123.5	4	131
4	Why the Kingfisher Always Wears a Bonnet**	115	9.4	4	129	3	143
4–6	Your Citizenship	115	9.4	5	148	7	148
4	When Jack Followed the President	116	9.1	3	127	4	128
4	Wigwam Fires and White Man's Ways	122	8.0	3	145	5	151
5	The Grizzly as a Humorist** .	123	7.8	4	137	5	142.5

TABLE IV

TEN SELECTIONS WITH HIGHEST AVERAGE RANK IN GRADES 4, 5, AND 6

Name of Selection	Rank in Grade			Average
	4	5	6	
Ill-Luck and the Fiddler**	3	1	3	2.33
Wolf, the Faithful Collie**	4	3	1	2.67
Joan of Arc**	1	2	7	3.33
The Swing Over the Swimming Pool	2	4	5	3.67
The Little Cabin Boy**	5	6	4	5.00
Billy, the Dog That Made Good**	14	5	2	7.00
The Snow Battle**	8	7	14	9.67
Cheating the Flames**	12	10	8	10.0
Chi-Wee and the Rabbit**	17	8	6	10.33
The Happy Prince**	9	18	9	12.0

TABLE V

TEN SELECTIONS WITH LOWEST AVERAGE RANK IN GRADES 4, 5, AND 6

Name of Selection	Rank in Grade			Average
	4	5	6	
Makers of the Flag**	145	127	143.5	138.5
A Gift You Cannot See	144	137.5	135	138.83
Wigwam Fires and White Man's Ways	151	151	122	141.33
The Grasslands That Help to Feed the World	138	141	146	141.67
The Wonder of Sound	148	135	143.5	142.16
Your Radio	143	137.5	147	142.5
Magic Machines of To-day	142	147	145	144.67
The Flowers of Greenland	146.5	150	149	148.5
Music in the Air	149	152	151	150.67
An Ideal Senator	153	153	151	152.33

tions of those least frequently used in courses of study and textbooks.

3. *Comparative Rank of Least Frequently Used, Most Frequently Used, and Informational Selections.* Table VIII indicates the number and per cent of most frequently used, least frequently used, and informational selections falling into the percentile limits of 75.1–100.0, 50.1–75.0, 25.1–50.0, and 0–25.0.

A study of Tables I to VIII indicates that when children's interests

and teachers' judgments are employed as evaluating criteria, (1) a smaller per cent (22.0) of the most frequently used literary prose selections fall in the lower percentile limits 0–25.0 as compared with least frequently used selections (34.4%) and informational (66.7%); (2) none of the most used literary selections was listed among the highest or lowest ranking 10 of the 153 [(1) and (2)

TABLE VI

TEN LOWEST RANKING SELECTIONS OF THOSE MOST FREQUENTLY USED IN COURSES OF STUDY AND TEXTBOOKS

Name of Selection	Rank in Grade			Average
	4	5	6	
The Cratchit's Christmas Dinner*	89	95	89	91
The Pine-Tree Shillings*	86	99	93	92.67
The Story of Achilles*	99	83	105	95.67
How the Chipmunk Got Its Stripes*	109	109	76	98
The Story of Aeneas*	95	104	106	101.67
Lincoln as a Boy*	98	100	124.5	107.5
Gettysburg Address*	108	126	109	114.33
The Arab and the Camel*	103	135	111	116.33
Washington and the American Army*	90.5	135	133	119.5
Hard Lessons*	124	119	138	127

TABLE VII

TEN LOWEST RANKING SELECTIONS OF THOSE LEAST FREQUENTLY USED IN COURSES OF STUDY AND TEXTBOOKS

Name of Selection	Rank in Grade			Average
	4	5	6	
Peril in the Grand Canyon**	134	113	127	124.67
How the Blackstick Was Not Asked to Princess Angelica's Christening**	126	121	129	125.33
Music-Loving Bears**	110	145	130	128.33
A Handful of Clay**	135.5	125	128	129.5
The Little Blue Fox**	105	144	141	130
Why the Kingfisher Always Wears a Bonnet**	129	149	115	131
The Grizzly as a Humorist**	137	142.5	123	134.16
A Strange Teacher**	135.5	131	139	135.16
Christmas Excitement**	146.5	146	119	137.16
Makers of the Flag**	145	127	143.5	138.5

TABLE VIII

NUMBER AND PER CENT OF THE 153 SELECTIONS FALLING WITHIN CERTAIN PERCENTILE LIMITS

Percentile Limits	Types of Selections					
	Literary selections most frequently used in courses of study and textbooks		Literary selections least frequently used in courses of study and textbooks		Informational selections	
	Number	Per cent	Number	Per cent	Number	Per cent
75.1–100.0	6	14.6	8	11.9	1	2.2
50.1– 75.0	12	29.2	20	29.8	1	2.2
25.1– 50.0	14	34.2	16	23.9	13	28.9
0– 25.0	9	22.0	23	34.4	30	66.7
Total of each type presented for experimentation	41		67		45	

The figures in this table were taken from the percentile columns given in Tables I, II, and III and from similar percentile columns for Grades 3 and 7. In these five percentile columns the percentile score of any selection appears only once, namely, under that grade in which the selection received its highest rank. This table will read, therefore: Of the 41 selections of the most frequently used type of literary material, a total of 6 or 14.6% fell in the percentile limits 75.1–100.0.

seem to indicate that much used literary material, while not receiving either the very highest ratings or the very lowest, ranks as a whole a little higher than seldom used literary selections, and considerably higher than informational selections when all types of these are considered]; (3) the descriptive type of informational selection was almost universally rated lower than informational material of the story or story-dramatic type, as well as lower than literary selections of both the most and the least used types; and (4) informational selections of the story, and particularly of the story-dramatic, type can be written which compare most favorably with literary selections. When one considers the fact that informational reading materials are relatively new, represent a comparatively unknown field for teachers and pupils, and hence do not have the advantages which operate in favor of literary selections, such as love of literature

TABLE IX

GRADE PLACEMENT OF THE 108 LITERARY SELECTIONS USED IN THE EXPERIMENTAL BOOKS FOR GRADES FOUR, FIVE AND SIX

Grades in Which Selection Was Ranked Highest		Same Grade	Moved Up		Moved Down	
			One Grade	Two Grades	One Grade	Two Grades
Most Frequently Used Literary Selections	3				4	
	4	4			10	5
	5	1	1		1	
	6	1	2	4		
	7		8			
Total: (41 presented)		6	11	4	15	5
Per cent		14.6	26.8	9.7	36.6	12.2
Least Frequently Used Literary Selections	3				5	
	4	3			3	6
	5	11	8		2	
	6	4	9	7		
	7		9			
Total: (67 presented)		18	26	7	10	6
Per cent		26.8	38.8	10.4	14.9	9.0
Total of Both Types of Literary Selections: (108 presented)		24	37	11	25	11
Per cent		22.2	34.2	10.2	23.2	10.2

This table is read: Of the 41 most used literary selections, 4 were ranked higher in third grade than in any other grade. These four were moved down one grade by this ranking, *i.e.*, they had been placed in the fourth grade of the experimental books as had been dictated by present practice. The second horizontal column reads: Of the 41 most frequently used literary selections 19 (4 + 10 + 5) were ranked higher in the fourth grade than in any other. Of these, 4 were ranked by the experiment in the same grade as practice had placed them, 10 which were originally in the fifth grade were placed in the fourth grade, and 5 which were originally in the sixth grade were placed in the fourth grade.

and long established techniques for teaching, the wonder may be that any of the selections compared favorably with the literary material. Another factor which may always militate against high scores for certain kinds of informational materials, and which was undoubtedly operative here, can be found in the nature of these materials, since often they satisfy immediate needs and furnish desired solutions to problems which, when once solved, lose much of their interest. For example, in answer to the question, "How does the air bring the sounds to a radio?" material was prepared of a descriptive nature entitled "The Wonder of Sound." Children were much interested in this story at the time, but when the explanation was once given and understood, little further appeal remained, and hence the selection was not chosen later as being more interesting than the literary selections in that group.

4. *Grade Placement of Literary Prose Selections.* Both the most and the least frequently used literary selections were placed in the experimental books in those grades where present practice dictates, as indicated by the survey of courses of study and textbooks described in Phase 3 of the experiment.

A study of Table IX indicates that when children's choices and teachers' estimates of appropriateness were applied as evaluating criteria, only 14.6% of most frequently used literary material and 26.8 of least frequently used literary material were correctly placed as determined by present practice, and that 36.5% of the most frequently used selections should be moved to higher grades and 48.8% should be moved to lower grades. That the results indicate that a larger per cent of the most frequently used literary selections should be moved down instead of up may be due to the fact that selections used again and again become old to pupils of grades six and five, while they are still fresh and interesting to children of lower grades. It is highly probable, however, that the figures in these tables would be materially changed had the study been extended for sixth grade pupils through eighth and ninth grade materials, and for fourth grade pupils through third and second grade materials. Nevertheless, when one considers that only 22.2% of the selections are placed in the same grades as present practice now places them, a large discount may be allowed, and still the conclusion must be drawn, if the criteria used in this experiment are accepted, that there is at present considerable

misplacement of literary materials in intermediate grades. These findings in the main agree with other studies of a similar nature.

In applying the results of this experiment to the problem of selecting a well-balanced list of reading materials, various assumptions might be made, depending upon the answers given to such questions as: Shall all types of materials—most and least frequently used literary selections, story-dramatic, story, and descriptive informational selections—be used? If so, what proportion of each type should be placed in each grade? Should a balance be maintained between longer and shorter selections? Should informational selections of the descriptive type be completely eliminated regardless of the amount of this type of material which must be read in life? And the like.

In selecting reading materials for the fourth, fifth, and sixth grades the following assumptions would seem reasonable:

1. It is educationally desirable that selections of the informational type as well as both most and least used literary material be included. That new life is needed in the reading materials presented to children is almost universally accepted. Since none of the most used literary selections found its way into the list of the highest 10 in this experiment, there seems to be sufficient evidence that appropriate new materials can and should be found.

2. Some balance, consisting of, for instance, 30% of selections most used in textbooks and courses of study, 40% of selections least frequently used in textbooks and courses of study, and 30% of informational selections, should be maintained. This assumption is set up because of a belief in the desirability of improving and making more interesting the reading of children by adding new and fresh materials while retaining the best of the old. Since a large proportion of the reading a child or an adult has to do in life is informational, it is particularly desirable that materials of this type be included.

3. Only those informational selections should be utilized which ranked in the upper 80% as shown by the results of the experiment.

4. An attempt should be made to raise the interest element in the descriptive type of informational selections by changing the form, where advisable, to the story type, and, in some instances, to that with a high dramatic element. Although a sufficient number of informational selections ranked in the top 80% to make up the 30% assumed desirable in assumption 2, the high ratings given informational selec-

tions of the story-dramatic type, such as "The Swing Over the Swimming Pool" and "The Red Sweater's Service," would argue for the value of changing the form of some of the selections of the descriptive type. Although the scores accorded the selections marked † in the following lists were sufficiently high to warrant their inclusion, a re-writing along the lines suggested would doubtless add to their *interest* element.

5. No literary prose selections of the 108 utilized in the experiment should be chosen which ranked in the lower quartile or received a percentile score of less than 25.

In striking the 30-40-30 balance suggested in assumption 2 it would be necessary in some cases to place a selection in a grade where it did not receive its absolute highest rank, but in no instance should the conditions of assumptions 3 and 5 be violated. Where grade changes have been made in the following recommended lists of reading materials, a selection so changed received in most cases almost as high a rank in the grade in which it is placed as in the grade in which it received its top rank; for example, "The Snow Battle" ranked 7 in the fifth grade and 8 in the fourth grade. It is placed in the fourth grade in the recommended list in order to maintain the suggested 30-40-30 balance. For similar reasons, "Daniel Boone and the Founding of Kentucky," which ranked 16 in the fourth grade, 27 in the fifth grade, and 28.5 in the sixth grade, was placed in grade six. In shifting selections from one grade to another on the basis of the criteria used, it is probable that some changes in vocabulary, sentence structure, and the like, will be found necessary to fit the material to the abilities of the children of the various grades.

The following lists of reading materials for grades four, five, and six are recommended as a result of applying the conclusions of the experiment in the light of the foregoing assumptions.[4]

RECOMMENDED LISTS OF READING MATERIALS FOR GRADES 4, 5, AND 6

Grade 4

Name of Selection	INFORMATIONAL	*Rank*
The Swing Over the Swimming Pool		2
Barbara's Basket of Fruit		29

[4] Selections marked # were chosen for these lists from materials originally presented in grades three to seven. It will be noted that in accordance with usual practice, and because of the need, more material has been placed in the sixth grade than in the fourth and fifth.

The Fire Engine That Lost Its Way # 63
Pioneering In The Air 72
The Man Who Said, "What Can I Do?" 93
Crossing the Sahara Desert # 96
The Mysterious Old Stone Mill # † 113
Our Fire Departments # † 114.5
In The Elevator † 118
A Shooting Star # † 122

LEAST FREQUENTLY USED LITERARY SELECTIONS

Joan of Arc 1
The Snow Battle 8
Going for the Doctor 15
Dust Under the Rug # 39
The Little Furry Ones That Slide Down Hill 42
Glorie Goldie's Fishing 45
Frightening the Indians 46
The Wise Goat and the Wolf # 49
Florence Nightingale 51
John Muir # 57
The Only Lion Farm In the World 60
The Unknown Soldier 66
Bill Brown's Test 70

MOST FREQUENTLY USED LITERARY SELECTIONS

Robinson Crusoe 10
Rumpelstiltskin 18
William Tell 20
Aladdin and the Wonderful Lamp 21
Down the Rabbit Hole # 23
The Little Lame Prince # 27
The Rat That Could Speak 38
Pomegranate Seeds 52
The Adventures of Ulysses 56

GRADE 5

INFORMATIONAL

The Man Who Went to Panama # 58.5
Careful Campers and Picnickers # 80
The Land of the Midnight Sun # 88.5
A Close Election 91

The Story of the Milk Cap 97
The Ride of Marcus Whitman # 98
A Friend in the Sky 103
The Fool, the Frying Pan and the Fire † 112
Fire Prevention Day † # 115
With the Help of Guinea Pigs † 120
When Men First Talked # † 122

LEAST FREQUENTLY USED LITERARY SELECTIONS

Ill-Luck and the Fiddler 1
Caspar, the Snow King # 9
The Angry Polar Bear 11
Fighting the Fire Monster 19
A Turkey for the Stuffing # 28
Allarm 29.5
General Robert Edward Lee 52
What Happened One St. John's Day 55
Heroism in 1925 61
Fighting a Depth Bomb 64
Grace Darling # 66
The Emperor's New Clothes 68

MOST FREQUENTLY USED LITERARY SELECTIONS

Old Pipes and the Dryad # 12
The Legend of Sleepy Hollow 13
Pinocchio 15
King of the Golden River # 17
Tom, the Water Baby # 23
Stories of King Arthur 24
Roland and Oliver 38
Pandora 46
Robin Hood 51

Grade 6

INFORMATIONAL

The Red Sweater's Service 11
Raymond Remembers the Rules 32
One Finger and a Paddle 37
A Fall On The Rocks 64
Some Great Buildings of the World 87.5
The Tutor From the North 94

The Great Disaster # 97
How We Got Our ABC's and XYZ's † 114
Man's Ways of Making Music † 114
Your Citizenship † 115
When Jack Followed the President † 116
Burning Up Your Money # † 121

LEAST FREQUENTLY USED LITERARY SELECTIONS

Wolf, the Faithful Collie 1
Billy, the Dog That Made Good 2
The Little Cabin Boy 4
Chi-Wee and the Rabbit 6
Cheating the Flames 8
The Happy Prince 9
The Race for the Silver Skates # 12
The Magic Prison 13
Molly in Her Element 16
The Charcoal Burner 20
A Silent Heroine 22
Sergeant York of Tennessee 26
Daniel Boone and the Founding of Kentucky 28.5
The Challenge of Fujiyama # 39
The "Great White Doctor" of Africa 44
Hunting With a Camera 54.5
On the Farm 59
Clever Companions # 65

MOST FREQUENTLY USED LITERARY SELECTIONS

The Porcelain Stove 10
Gulliver's Travels 17
Ali Baba and the Open Sesame 19
The Adventure of a Mason # 23
Moni, the Goat Boy 31
Sinbad the Sailor 33.5
Rip Van Winkle 33.5
A Dog of Flanders 38
Where Love Is, There God Is Also 46
Damon and Pythias 57

In choosing the literary selections which were sent to the classrooms for experimentation, 2742 were considered in the fourth, fifth, and sixth grades alone. Through the judgment of carefully selected

committees and reference to outstanding courses of study, this list was reduced to 108 for further experimentation. In preparing the material for the informational selections an effort was made to include that which would not only satisfy the ascertained interests of children but would also be accurate in every detail. Considerable attention was devoted to the form of this material in order to determine the relative ranking of the descriptive, story and story-dramatic type. The unusual care given to the preparation of the informational selections was due to the belief that the need for this kind of selection in basic reading programs is great. The aim sought in placing the experimental books in the hands of children and teachers, therefore, was to determine from an already highly selected list of materials those which seemed to be most interesting and most appropriate when presented in actual classroom situations. The foregoing lists contain the selections which most nearly measure up to this twofold criterion on the basis of the assumptions made.

SHALL WE DISCARD THE TRADITIONAL SUBJECTS OF STUDY IN THE UPPER ELEMENTARY SCHOOL?

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IN RECENT years there has been a general, and, on the whole, a healthy trend in our schools toward organizing the subject matter of the curriculum into large units of thought and of study. When many of us were pupils in the elementary school, the recitation period dealt almost entirely with detached or semidetached bits of information, all of which were supposed to be memorized against the day of the examination. Place locations in geography, dates, battles, and wars in history, or individual processes in arithmetic made up the content both of the curriculum and of the recitation period. There was a certain dead-levelism about all of these facts, any one being considered as important as any other. Modern education has recognized the faultiness of such work and has tended to make the recitation period and the study process in general a matter of organizing small bits of knowledge into large units of thought. For example, locations in geography are to-day learned in context. The location of a city is learned because its position is pertinent to the solution of an important study problem. Dates and battles in history are thought of as related to the larger trends of development. The modern textbook in arithmetic makes the page or the chapter the unit of quantitative thinking. For example, a recent textbook gives an entire page to the meaning of one hundred per cent, another page to the buying of radio supplies, and another to trade discount. The quantitative aspects of these three topics are brought out in detail through problems which develop them. We have few pages in the modern arithmetic textbook in which there are as many topics to be thought of as there are problems concerning them.

I

As we have stated, this trend in modern education is a healthy one. It is thoroughly supported by the tenets of modern psychology, which teach that a bit of information learned out of context is largely useless for solving future problems. Moreover, continuity of thought is impossible with the older scrappy way of learning and is more than likely with the larger units of thought and work.

It is only natural that such an idea should be carried to considerable lengths. There has become fused with it the conception that all boundaries between subjects are adult impositions on children and are useless in the truly progressive school. We are told that in real life we do not think in terms of geography, history, or arithmetic, but on the contrary, we think in terms of problems to be solved. It would seem, therefore, that new ways of organizing our elementary school curriculum should be established, and that as fast as possible we should discard the traditional subjects of study with which we are so familiar. We do not find much agreement, however, as to what should be substituted in their place as centers for the organization of our curriculum. One group of people would make the project—a whole-hearted purpose of some sort—the center of the curriculum. Another group would fuse some of the elementary school subjects and give the fusion a new name. Thus geography, history, and civics are to be combined and the new study called social science. Another group would use the expression "centers of child interest," and would organize the curriculum around such topics as "A study of community life with the building of a play village," or "How man has kept his records." [1] The chief agreement between all of these groups seems to lie in their opposition to the older subjects of study.

II

The arguments advanced in favor of the plan of doing away with geography, history, arithmetic, etc., may be largely grouped in four classifications. In the first place, proponents of the new point of view will argue that the unit-of-experience basis is in line with the trend of modern education toward emphasis on the psychological rather than on the logical. Real life is not divided into compartments. We do

[1] The Lincoln Elementary School Staff. *Curriculum Making in an Elementary School*, Chap. V. Ginn and Co., 1927.

not apply geography at one time, arithmetic at another, and literature at a third. Our experiences in real life are compounds, requiring us to draw from many subject-matter fields in order to solve our every-day problems.

Second, it is argued that the movement is in line with the modern conception of the need for larger units of subject matter, and that all the arguments cited above in favor of this point of view naturally apply. Third, being centered in the interests of children, the child-experience unit method makes for greater absorption of children in their work and enlists all of their energies, because the goals which are set for them are of recognized value to them. Finally, it is maintained that the method we are discussing tends to make knowledge more functional. We are assured that children really use their information in thinking and in solving problems, and that the great trouble with the school of the past was that the use of knowledge was largely absent.

In considering these arguments we must keep clearly in mind the fact that no one is contending for a return to the older disjointed methods of teaching. In progressive schools such methods are gone forever. The real point at issue is, does the unit-of-experience method make possible, or easier, advantages which cannot be gained when separate subjects are used as the basis of the curriculum? In other words, it seems reasonable to request the enthusiasts for the new point of view to prove that the advantages claimed for it cannot be easily obtained under the older organization.

In considering the first of the arguments noted above one will have to grant at once that life, to be sure, is not divided into separate compartments on the basis of the elementary school subjects. On the other hand, however, life for any one individual is never organized on the same basis or along the same lines as for another individual. Moreover, it is impossible for any teacher to determine, in advance, what problems will be of interest or of importance to her students when they reach maturity. In a changing civilization such as ours one can scarcely prophesy a year ahead about the problems which will confront adult citizens. There is therefore no basis of organization which can be defined as truly similar to the kind which will be necessary for the solution of adult needs.

After all, is not this argument based on a misconception of the

purpose of the school? Admitting that school life should consist of actual living, it is none the less equally true that school is a preparation for life. We want children to grow into intelligent citizens who can bring to bear on any problem, personal, vocational, or civic, a mind trained to grapple with its elements and to reach a sound conclusion. Such a mind has at its command a variety of techniques, skills, and points of view. Since one cannot be sure what problems will confront school children when they reach adulthood, and since we do not wish to impose adult problems on children anyway, we are forced to adopt that method which seems to give the best promise of training children in those techniques and points of view which will prove of most value to them as adults, provided this method may also prove interesting to the learners.

For example, while it is not advisable that geography and history and arithmetic should be learned in entire isolation from one another, special study exercises should be so arranged that skill in using the ideas of geography or history or arithmetic may result. Such exercise does not at all make impossible a later fusion of the subjects for the solution of larger problems. What we really want is a series of usable techniques, combined with information, and a point of view, in each of the subjects.

With regard to the second argument that the unit-of-experience idea is in line with the modern trend toward larger units of thought, one need only say that the latter are entirely possible with the traditional subjects of study. As a matter of fact, no good teacher fails to organize her work in large units of thought in each of the subjects.

As for the third claim that the unit of thought makes possible a greater absorption of children in their work because their interests are more fully stimulated, the only answer that one can give is that there is little, if any, scientific proof for the statement, and that any one who has ever seen the whole-hearted absorption of children in geography, arithmetic, or history will beg to deny the contention in its entirety.

The fourth argument, namely, that the unit-of-experience idea makes knowledge functional and enlists the thinking process more completely than any other way, has been partly answered in our discussion above of the logical *versus* the psychological. We do not say that a doctor is not doing good thinking when he solves a purely

bacteriological problem. One surely would not deny that a good geographer is doing good thinking just because he remains largely within the realm of his subject. There is nothing inherently difficult in making geographic knowledge functional in a period devoted to geography.

III

We have now considered some of the arguments in favor of the unit-of-experience idea and have suggested some answers to them. Let us examine the dangers with which the idea is fraught. First, it would be well for us to realize that there is nothing so elusive as the doctrine that things must be studied together because they are related to each other. When one deals with the relations of facts or ideas, he is sure to be dealing with dangerous commodities, because in this world life is so organized that any one fact or idea can be shown to have *some* relation to any other one. Tennyson was expressing a profound truth when he said that thorough knowledge of the "flower in the crannied wall" would reveal everything about both God and man. Some relationships are more obvious than others, but the dangerous thing about them is that if we start to pursue all the connections of any fact of interest in the elementary school, we can justify studying with it any amount of geography, arithmetic, history, literature, and the like.

The unit-of-experience idea is founded on this conception of relationship. For example, the children in a class of the fourth grade wanted to know better how to choose their meals in the school cafeteria.[2] Here is a very simple and direct need which should be discussed and met. Before long it is found that since jellies and preserves are foods and have a connection with the general topic, they should be made by the class. Food is eaten at luncheon, therefore invitations to luncheon seem a legitimate part of the study. The food which eventually goes to the cafeteria is raised in the orchards and on the farm, therefore children might be expected to write original poems on them if they study the topic of food. Many of our foods do not come from America but must be sent in from South America and Europe, therefore the geography of Central and South America and of Italy must be studied. Out of the original project, then, of choosing food at the

[2] The Lincoln Elementary School Staff, *op. cit.*, p. 158.

cafeteria a study of the following topics was supposed to have resulted:

SUMMARY OF WORK IN SUBJECTS OF STUDY[3]

Reading

Each pupil selected a fruit or vegetable for individual investigation and did library reading to get his information.
Special reading of class booklets made by the pupils, "The Fruit Book"; "The Jelly Business."
Reading menus and food charts.

Composition

Writing a special report.
Arranging programs for other groups. These call for oral and written work.
Making original poems on orchard, farm, or garden.
Planning luncheons and writing invitations and letters.
Writing a fruit book. Writing a book on the jelly business.

Geography

Location of fruit centers.
Central and South America.
Italy.
New York State, New England, Florida, California.
Truck farming as an occupation.
Effect of climate, altitude, and latitude on fruit-growing.
Transportation of fruits and vegetables.
Railroad and steamship lines.
Life in the tropics—temperature; physical geography.

History

Primitive ways of getting food.

Science and household arts

Food values: proteins, carbohydrates, fats, minerals, vitamins.
Balanced meals.
Methods of canning, of preserving, and of making jellies.
Effect of boiling.
Cold-pack method.
Fermentation.
Keeping apples, potatoes, etc.

[3] The Lincoln Elementary School Staff, *op. cit.*, pp. 167-168.

Luther Burbank.
Insects that harm fruits and vegetables.
Home garden and fruit trees.
Winter protection of buds.
Seeds.
Tests for starch.
Removal of fruit stains.

Fine Arts

Making covers for a fruit book.
Painting pictures of fruits and vegetables to illustrate booklets.
Making and decorating a food chart.

Arithmetic

Recipes: weighing, measuring.
Profits to the farmer.
  Buying; selling.
  Retail; wholesale.
Cost of preserves, of jellies, and of cans of fruits and vegetables.
  Comparison with store prices.
  Retail overhead.
Fractions in health charts and recipes.

One wonders just how the selection of these topics was made. Surely it could not have been made on the basis of real necessity to answer the main problem. Apparently these topics are of reasonable interest to the child and could be connected with the main topic. If interest and a possible connection with the original problem are the only criteria for the admission of subject matter, then one wonders why Robert Frost's poems on New England, where much fruit is raised; compositions on the gypsies, who had peculiar forms of cookery; the geography of fruit regions in Spain, Northern Africa, and the Orient; primitive cannibalism among the natives of Africa, or any number of other such topics were not included. There seems to be no exactness of requirement in the topic itself which includes some things and excludes others. Moreover, one cannot help but be doubtful whether the children really would need to know all of the various topics listed above in order to be able to select food better at a cafeteria.

The above criticism may strike one as unjust, since the cafeteria ex-

perience may be thought of merely as the approach to all of this subject matter. If that be the case, then the unit-of-experience group would believe in starting with any immediate interest or need of the child and in adventuring into subject matter anywhere without any guiding purpose except the passing whim of children or teachers, or the possible tenuous connection with the original idea. The criticism we are making is that mere connection, one thing with another, may lead one into a random, illogical, and possibly fruitless collection of a heterogeneous group of facts out of which the student comes with certain information, to be sure, but with no really satisfactory point of view or unity of impression. The teacher too frequently thinks of the original problem as a method of leading into the subject matter rather than as a problem of which children want to know the answer.

The second criticism of the unit-of-experience idea is that it is likely to lead to a loss in our teachers of all that we have learned through decades of educational progress of how to teach well the various subjects. For example, in geography there is surely a good and a bad way to teach locations or map directions or geographical principles. In arithmetic there is a good and a bad way to teach number facts or problem solving. In history there is a good and a bad way to teach dates or social movements. If we are so interested in following the child's interests wherever they may lead in connection with a given unit, there is a great deal of danger that we shall forget how to handle well such points of technique. Moreover, our materials are not made for this new type of work, and for the present at least we must rely on the materials arranged for the teaching of the separate subjects. These cannot be expected to be of efficient assistance to children struggling with the unit-of-experience method.

The third criticism of this method is that there is little doubt that six grades of such teaching as described above must lead to certain omissions of subject matter. The proponent of the theory is undisturbed by this; he contends that much more information is gained in the elementary school than is retained in later life, and that omissions need not worry one. Such may indeed be the case, although it is likely to distress one when he finds a seventh grade child in one of our experimental schools who has difficulty in spelling some of the simplest words, who thinks that Lake Champlain is one of the Great Lakes, has never heard of Magellan or General Lee, and does not

know whether the Revolutionary War preceded or followed the Civil War. There is another factor, however, to be considered. One would certainly not contend that a child could learn how to do division unless he could subtract and multiply. A child cannot be expected to understand the geographic influence of mountains on the life of a people unless he knows some of the elementary facts about the effect of mountains on winds and rain. In every one of the elementary school subjects there is a certain progression of facts and ideas; and if one breaks into the chain of this progression at one point, he may have great difficulty because of not knowing what preceded it. Of course the contender for the unit-of-experience idea would maintain that the links of this chain will be learned as the child passes through the grades. This may be possible, but one may have a legitimate right to doubt it at the present time.

Fourth, the unit-of-experience idea may be criticised on its handling of skills. Many modern schools which have embraced the unit-of-experience idea maintain that they do teach the necessary skills, and in support of this, point to the records of their children on standard tests. Such records, however, are inconclusive proof for two reasons. In the first place, in most of these schools the children are a selected group with high intelligence. They would tend to pick up these skills with the minimum of teaching; moreover, it is a well-known fact that in many homes the parents have taken the matter up and have taught the skills themselves. Because of the high intelligence of the children, such teaching produces very quick results. In the second place, too frequently these skills are acquired in the school devoted to the unit-of-experience plan in a way which would be unacceptable in many of our good modern schools of the traditional type. Feeling that the skills are necessary, instructors are likely to teach them in complete isolation from subject matter. Instead of having, for example, a good arithmetic project to understand percentage, as would be the case if the separate subjects were being well taught, the unit-of-experience school would give drill exercises on percentage which would probably prepare the child to pass standard tests, but which would mean a most stultifying form of teaching percentage.

The final criticism is suggested in the third point above. There is an inherent logic in all the elementary school subjects which is based on the progressive accumulation of skills, information, and ideas, and

which leads to a certain point of view based on the principles of the subject. Under the unit-of-experience plan it has yet to be shown that the children have really acquired such principles and points of view. Much testing needs to be done along this line.

IV

The writer does not maintain for a minute that in the end the unit-of-experience plan may not prevail. We must all welcome the experimental work which is being done in the field. Possibly scores or hundreds of years from now the plan may be so well worked out as to answer all of the criticism suggested above, but, in the meantime, is there not a middle-of-the-road position for the public school—a position which will secure many of the benefits claimed for the unit-of-experience plan and which will at the same time preserve the values of the traditional methods? The writer believes that there is such a position, which has its foundation in three principles of good elementary school practice.

The first of these is that larger units of thought and study which are chiefly confined to one of the elementary school subjects should constitute the curriculum units in the upper elementary school. This conception is representative of good modern practice in many of our progressive schools. Instead of making each day's recitation an end entirely in itself with but little continuity from day to day, a large unit of thought is carried over a number of days or weeks. This idea is thoroughly in line with the point of view of even the unit-of-experience enthusiasts, as is shown by the book already referred to. In this book, which is devoted to the unit-of-experience point of view, there is a unit on China which confines itself largely to the field of geography.[4] Examples of such units might be as follows. In geography there would be a unit extending over perhaps two weeks and devoted to answering the question, Why is New England with few raw materials so great a manufacturing center? In history there would be a unit devoted to the westward movement and its consequences in American history. In arithmetic we might have a unit devoted to the cost of building good roads and their pecuniary value to the farmer. In literature some time might be spent considering what it is that makes a good poem about the sea.

[4] The Lincoln Elementary School Staff, *op. cit.*, p. 131.

We find our second principle of the middle-of-the-road position in an examination of these suggestions for units. The first one on New England could not possibly be carried out without considerable reference to the history of this section of the United States. Manufacturing started in New England partly, to be sure, because of poor facilities for agriculture—a geographical reason—but also to a considerable degree because of water power. To-day power derived from water has but little importance compared to that derived from coal and steam. The study of the problem, however, does require the discussion of historical elements for its complete understanding. On the other hand, the study of the second topic, the westward movement, cannot possibly be undertaken without considerable reference to geography, for the importance of the Appalachian boundary in the early history of our country makes a consideration of it essential. Such a consideration is definitely within the field of geography.

The same sort of things might be said about any topic which largely centers in one of the elementary subjects. It cannot possibly be handled without reference to one of the other subjects; and, indeed, for a long time no good teacher of geography has failed to teach history when it would be of assistance, nor has any teacher of history failed to teach geography when it was necessary. Let us note, however, that when the geography teacher teaches history, she does it to help answer a geographic problem. The original impulse for the study as well as the eventual answer to the problem is definitely in the field of study and makes for the understanding of geographic problems.

In the same way many arithmetic problems find their justification in human needs which spring from geographical or historical problems. Literature as a reflection of what men do and feel must frequently borrow the subject matter of the other school subjects. Who, for example, could appreciate to the full Shelley's "Ozymandias of Egypt" without some knowledge of the history and geography of Egypt?

The points we are making, therefore, are, first, that larger units within the subject matter fields are in line with modern classroom practice; and second, that such units cannot be confined entirely within subject matter boundaries. The important advantage which such work as we have been describing, however, has over the unit-of-experience method is that the subject which is being studied offers some

basis upon which to accept or eliminate subject matter. It is not a case of merely following any topic which may be connected with the original question.

The final principle of the position we are defending is that in arranging our curriculum it would be desirable to have much closer correspondence of topics in the separate subjects than has been the case in the past. For example, when one is discussing the geography of Europe, he might well be studying something of the history of Europe at the same time. If one is considering the age of chivalry in history, one might also include poems in the literature class dealing with the topic. Attempts at such an arrangement have already been made in various schools, and the results seem to be satisfactory. Let us not forget, however, that when history, for example, is taught in such schools, it is good history, and not a mixture of literature and arithmetic and geography.

V

To summarize, modern education is strenuously opposed to the study of disconnected, unintegrated facts and ideas, and is in favor of larger units of subject matter. But to conclude that all subject matter boundaries should therefore be discarded is fraught at the present time with several serious dangers for the average school. Such dangers may be largely obviated, while most of the advantages of a unit-of-experience method may be gained, if we adopt a policy of teaching a given school subject in large units, drawing on the material of other subjects as may be necessary and rearranging our curriculum to admit of greater correspondence of topics in the separate subjects.

THE CONTENT OF THE SOCIAL STUDIES IN THE ELEMENTARY SCHOOL

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THE study of the conditions affecting human living may fittingly be called the social studies. Anything which promotes ease of living, better group relationships, greater physical comfort, or greater satisfaction in doing the work necessary to provide the conveniences and necessities of comfortable living for man may truly be called social. Experiences which will promote understanding of these living conditions, appreciations of their possibilities, and efficiencies and knowledges adequate to make worthy living possible are suitable school work, provided they are experiences fitted to the child's tendencies and abilities. The social studies have to do, then, with those considerations affecting human living which are involved in (1) contact with the physical world and its laws; (2) contact with people and the laws which operate in the attempts of people to live with people; and (3) contact with the work of the world and its laws in (*a*) procuring and producing raw materials, (*b*) manufacturing these raw materials into more useful commodities, and (*c*) distributing these materials and commodities to the people who consume them.

CONDITIONS OF THE PHYSICAL WORLD WHICH MODIFY MAN'S LIVING EXPERIENCES

How one does things is influenced by the weather. Storms interfere with many activities and modify others. Sunshine makes possible certain enterprises, while moisture or even cloudiness are essential to others. The damp atmosphere of England had some influence on the development of the cotton industry. Winds, temperature, and precipitation are of concern in man's affairs. Prevailing winds affect sailing, the style and location of houses, and the amount of rainfall. Temperature and precipitation exercise real control over man's agricultural efforts.

Situation, including distance and space, has to do with modifying man's living. Latitude and altitude affect climate and possible occupations. Nearness to bodies of navigable waters, to available sources of clean water and food supplies, and to centers of travel modifies man's industrial activities and his human relationships. Other men want clean water and food, other men travel over the same water routes, and other flocks and herds need to be pastured where there are food and water. Therefore, social problems arise. By combined effort men can bring water from great distances, build roads over mountains, mine coal out of the ground, grow a variety of products, ship commodities to various places, and provide means of travel over great distances.

Surface and soil constitute a significant factor in human life. The contour of the land makes travel pleasant or difficult, makes agriculture laborious or comparatively easy, and makes the landscape interesting and inspiring, or deadly monotonous. The kind of soil makes possible the variety of activity. A clay soil may make a pottery possible. A sandy soil supports one kind of crop while a forest loam feeds different plants. The constituents of the soil, including lime, humus, sand, clay, phosphorus, iron, and other minerals, determine largely what shall be grown. The story of the earth's history, as written in the soil, is adding much to man's concern in the story of the universe. The influence of the scenery—mountains, valleys, streams, plains, oceans, lakes, and clouds—upon human life is not negligible. The sunny skies of Italy, the mountain fastnesses of the Alps, and the broad stretches of the prairies of the Middle West have been of recognized influence upon men's conduct. The soil and surface features have had much to do with shaping a nation's dietary habits, customs, beliefs, occupations, manner of living, and faiths as well as its relationships with other nations. Wars, religions, manners, customs, foods, clothing, houses, art, and industry are to be understood in part in terms of the influence of soil, climate, and surface features.

The resources of a country have much to do with the kind of life developed there. The earth products determine many of the industries. They are to be considered as one factor in determining the kinds of houses built. The igloo of the Eskimo, the adobe house of the Mexican, the bamboo house of the Filipino, the sod house of the

Kansas settler, the log cabin of the pioneers, the skin tent of the Arab, were all, in part, what they were because of the material available in the given country. The forests lead to lumbering and the gathering of gums and saps. The mineral deposits lead to gold, silver, lead, tin, and copper mining and to the establishment of smelters and foundries; the presence of coal deposits leads to the building of factories. Similarly, the animal and vegetable life of a country supports its population and shapes its dietary habits. There seems to be some recent scientific evidence of the influence of diet upon stature. Further, these animal and vegetable products furnish the materials for clothing and have something to do in shaping national costume and in making and furnishing houses. The art motives of a people are, in part, to be traced to some of the animal and vegetable products of their environment.

The various water forms shape life in a vital way. A maritime people has characteristics which come, apparently, from long experience with the hazards and joys of contact with the sea. Mountain streams furnish motive power. Great rivers make possible navigation into the inland. Lakes provide food, scenery, and water for irrigation and for household use. Ocean currents have much influence upon climatic conditions of life.

The health of a people depends upon understanding the laws of the physical world as they affect the body. The influence of sunshine, temperature, winds, scenery, quiet, proper diet, bathing, sleep, and exercise are all related to the conditions of the physical world. The control of germs, the avoidance of contagion, and the wise use of bacteria must be understood if one would live with an efficient body.

Beauty of landscape, color and sound in nature, height, distance, grandeur, and sublimity are all factors of the physical world which enter into the making of life.

CONDITIONS INVOLVED IN LIVING WITH PEOPLE

Man, by nature, likes to be with men. It is well that this gregarious tendency is so strong in man, for this earth has not enough separate islands to supply the need if men should desire to live alone. This living together has both advantages and disadvantages. To understand them we need to consider some of the forces and forms of social life.

What are the forces that impel men in life? Why do people continue putting forth effort? We shall have to wait for psychology and philosophy to go further in their researches before we can answer completely, but we can list some of the needs and desires which have a compelling influence. Prominent among them are the needs for food, clothing, shelter, and protection from dangers. Then there is the desire to have a family, the desire to adorn one's self, an intellectual curiosity which prompts man to continue going further in his search for truth, the desire to communicate and to record experiences, the desire to possess things one likes, and delight in the stimulation coming from variety. All of these operate to some degree in keeping men active. The satisfaction of these desires for one individual involves the satisfaction of other individuals. Many people cannot be satisfied except as men combine efforts and use concerted action.

Tendencies to combine have given rise to various forms of social life. Thus have developed the family, the tribe, the clan, the village, the state, the nation, the church, the school, the factory, the labor union, the World Court, and the League of Nations. By combining, men are able to apply greater strength and resources, and to bring into action a greater variety and evaluation of ideas. By combined efforts, a town can bring a supply of fresh water from a distance, provide protection from fire and robbers, develop streets, build bridges, support a daily paper, have a great variety of foods, maintain schools and churches, and keep up parks, libraries, and playgrounds.

Of course in living in a community there are disadvantages arising from the presence of numbers. Space is more crowded; sunlight is put at a premium; personal tastes may prove a nuisance to neighbors; there is danger from contamination and contagion; clean food and water are more difficult to secure. These disadvantages show themselves in rivalry of interests and bring out the necessity of regulation. Sometimes this attempt at control has been in the interest of one or a few, and we have had a tyranny or an oligarchy. Sometimes there has been an attempt to regulate in the interest of all, and we have seen democracies taking form.

Various forms of control and protection have been tried out by the various peoples of the world. Some have been valuable because they have contributed to the world's knowledge about how best to secure the desired results. What we need to know to-day is the way to

regulate community life in order to secure the outcomes we believe desirable. Much help in learning how to guide our affairs can be gained by considering the efforts of other peoples, present and past, in trying to secure these same or similar ends. For this reason we study the social forms of other peoples of to-day and of the past.

This study of the forms and forces of social life should be such as will lead to some understanding of life as the people who are being studied live it. It should include questions about how the people live, what they do, what they believe, what are their aims, ideals, customs, and appreciations. In order to understand these we may need to consider the geography of their country, climate, scenery, resources, houses, foods, clothing, ceremonies, customs, work, art products, education, and writings and other records. We should know the limitations imposed upon them by their environment and the opportunities it offered. In all this it is important to get facts in their proper perspective, and to see these facts in their relative significance.

In our effort to understand the conditions of life to-day, and to explain how these conditions came to be, and to secure guidance in shaping our affairs, we need to study many peoples. There is no scientific evidence available at present adequate to give guidance in determining what peoples to study. Examination of the better new curricula reveals present opinions of some leaders as to which peoples are deemed most helpful. The selection we must make in the absence of scientific evidence can be guided by keeping in mind (1) the outstanding problems of group living that need consideration, (2) the nations that have made contributions by the way they have met these problems, and (3) the phases of present problems that appeal to the children for whom selection is made, and the phases of a nation's story suited to these children's study. The tendency seems to be to make selections from the stories of the following peoples:

1. Primitive peoples.
2. Ancient civilizations, including Arabs, Hebrews, Egyptians, Greeks, and Romans.
3. Certain old civilizations, such as those of India, China, and Japan.
4. European forms of living, such as feudalism, monastic orders, guilds, and the Church.
5. European peoples of the Middle Ages and earlier, as the Franks, Goths, Northmen, Saxons.

6. Modern European peoples.
7. Discoverers and settlers of the new world.
8. Colonial America, and pioneer life.
9. The American nation.
10. Other American civilizations, such as the Indian, the mound builder, the Eskimo, the Peruvian, and the Mexican.

Some curricula use a wide range of selection from this list, while others limit the work in the elementary school to stories of the American nation only. There seem to be good reasons for no longer thus limiting the work in the elementary school. Recent developments in means of travel, communication, and commerce have been breaking the barriers that separate peoples. With the world interest in aviation which finds it difficult to regard boundary lines, and with the radio which is connecting various peoples by means of common interests and developing group thinking, it is doubtful if the elementary school can long continue to ignore the stories of the various peoples who have contributed toward building a world civilization.

CONDITIONS INVOLVED IN SUPPLYING THE NEEDS OF LIVING

What are the needs of man if he would live a worthy, happy life? Animals seek food and a place to sleep. These two factors seem to constitute all that is needed to meet their requirements in living. Primitive man demanded little more to satisfy his wants. Unlike animals, however, man has in him a nature which senses difficulties, inconveniences, or unsolved situations; and an inventive tendency which has caused him to devise ways of bettering conditions. This led primitive man to seek a cave as a shelter, keep a fire burning at the entrance and thus shut out wild animals, cook his food in the coals and thus have more savory food, fashion garments out of the skins of animals, make some crude dishes of clay, and make weapons and tools of stones, bones, and tough branches of trees. From being content with mere animal existence, man, through his inventive, problem-solving ability, has come to be an individual who demands food, cooked and varied in kind; clothing to protect and adorn the body; houses that are clean and comfortable; tools and machinery which enable him to do things requiring greater strength and speed than he has and so overcome distance, space, and in some measure time; containers to hold his possessions; and means of recording his experi-

ences. The resources of almost the entire world are drawn upon to-day to supply the needs of an ordinary civilized man.

If we attempt to list man's most fundamental needs we can conveniently group them into the need for:

1. *Foods*—varied enough to keep a healthy body.
2. *Clothing*—to protect and adorn the body.
3. *Shelter*—to protect from weather and enemies, and to provide an abiding place; a shelter furnished, heated, lighted, ventilated, decorated, and kept sanitary.
4. *Records*—of worthy experiences, including records in clay, stone, and wax; in books, newspapers, charts, maps, and magazines.
5. *Utensils*—the containers to hold one's possessions, including principally those of clay, skins, wood, metals, and vegetable fibers.
6. *Tools and machines*—for facilitating man's limited strength and speed, such as hand tools like the hammer and saw; means of travel, such as boats, carts, automobiles, and aëroplanes; instruments of communication, including pencils, pens, typewriters, the telephone, the telegraph, cables, and radio; power machinery, made possible through the gas engine and the dynamo.

It is in the development of a better understanding of what is fundamental in these that we may hope to do much in socializing the child. Understanding something of the work that is done to provide these conveniences ought to promote social consciousness; sensing something of the creative achievement in devising these processes ought to promote a profound respect for human achievement.

To meet these needs three steps are usually involved: (1) the raw materials must be procured; (2) these materials must have work put upon them to make them more useful in meeting man's needs; and (3) these materials must be distributed to the people who consume them. If each individual were to attempt to supply his own needs he would fail in the attempt; because the variety of materials and the great distances from which they are drawn would make it a physical impossibility for one man to assemble the materials, aside from doing the work of changing them into the needed commodities. Coöperative effort provides the only way to meet the needs of civilized man. A single worker limits his efforts to a small part of a process, but does what he does in quantity. This quantity production necessitates a system of distribution and of compensation of the workers. Thus have arisen the big problems of the industrial, commercial world.

In order that a child may articulate in such a complex, industrial, commercial environment, he must have a series of experiences so guided as to enable him to understand the underlying essential processes in this complexity. What are these underlying processes? Enumerating them in a somewhat organized sequence may enable us to see the field of experience into which children may be led with profit.

The procuring of needed raw materials includes hunting, fishing, agriculture, forestry, lumbering, and mining. In some cases the raw materials exist ready for man to take. The fish in the sea, the wild animals in the forest, the trees on the mountain slope, the coal and iron and other metals in the earth have so awaited man's taking. But man's demands have been so great and his methods of taking have been so wasteful that the supply has, in some cases, become inadequate. Hence, he has resorted to conducting fish hatcheries, oyster farms, forestry enterprises, fox farms, and cattle ranches. Some other supplies were inadequate and of a quality which he found he could improve, so he has resorted to agriculture and animal husbandry. Thus he has more and better grains, fruits, vegetables, and meats to eat.

Children are interested in questions about how people live and what people do. Therefore, the stories of the processes of fishing, farming, coal mining, conducting a fish hatchery, and sheep raising are particularly appealing to them. The study of these industries in the elementary school should provide much rich opportunity for acquaintance with the detailed processes of procuring raw materials and growing raw materials.

The second step in the work of providing the commodities desired for man's comfort is that of transforming the raw materials into more useful products. The trees must be sawed into boards and the boards be made into houses; the clay must be cleaned and shaped into bricks, which must be baked in a kiln, and then be used in building a chimney. The wool from the sheep must be washed, carded, spun, and woven into cloth which can then be shaped into garments. Each of the raw materials must go through its essential set of processes which are fundamental to the successful outcome in a commodity.

Genuine social appreciation is furthered if one understands the simple hand process and the steps in the evolution to the complex

machinery process. A modern loom, weaving a piece of linen for a tablecloth, is understood and its processes appreciated better if one understands the Indian woman's loom with its simple heddle device, and the four-treadle colonial loom on which the blue and white coverlets were woven. A Jacquard loom acquires meaning for the student through his acquaintance with its worthy ancestors of simpler construction. The story of the Industrial Revolution seems essential to genuine consideration of the problems of capital and labor. Therefore, the simple weaving of a rug for the doll house in the first grade does more than contribute to natural tendencies of children at that age. It provides a bit of detailed experience in a process—a detail that is fundamental in appreciating the weaving industry of the world of all time. When the child comes in contact with woven products and when he has become old enough to consider the changes brought about in society by the development of machinery, the bit of weaving experience may contribute toward the meanings involved. Each of the five other industrial fields already mentioned has gone through an evolution of processes due to the introduction of machinery similar to the changes wrought in the textile or clothing field just suggested. Awareness of the significance of these changes in respect to quantity production, value, and influence upon the life of the workers is an outcome of social studies to be desired if the work is rightly guided through the several years of school.

Right sense of values necessary to proper selection and use of commodities requires that one know something of the materials that enter into the construction, their source, value, limitations, and possibilities. For example, wool is limited in its use because the structure of its fibre as revealed by the microscope is segmented like a jointed rush and each segment on its upper edge is equipped with hooks curving outward around its entire edge. These hooks tend to interlock when the fabric of wool is rubbed and the numerous fibers become matted or felted. Therefore, a woolen garment should not be rubbed in washing. This limits the uses to which a woolen garment can be put. Boiling seems to weaken the structure of the segments and they tend to telescope, thus shrinking the fibre. This again limits use.

And too, the cotton fibre has possibilities of being treated chemically by some methods to make it look like silk; and of being treated chemically by other methods to make the finished fabric look like

wool or linen. Clay, because of its plastic nature, offers many possibilities in shaping; but it, likewise, has some structural and design limitations. The grain of the wood and the resulting direction of strength offer serious structural limitations which must be regarded in furniture design. Each material has its interesting aspects, which a person can appreciate if he engages in activities involving its use. Such experience is helpful in learning to value the commodities one uses.

In the manufacture and use of industrial products, there are certain underlying scientific principles. To be aware of these, and to understand the way in which these laws act on these materials is to be intelligent about some things that closely touch living. The reason why yeast or baking powder bread is light, the growth principles that produce the grain in wood or the pattern in the bird's-eye maple, the principles involved in freezing ice cream or in canning fruit, the underlying reasons for correct methods of washing woolen garments, the proper diet for a day and criteria for judging diet, the reasons why silk is sometimes loaded and why it so easily can be loaded, the life cycle in producing silk, the essential difference between corn and wheat flour that produces the difference in texture and food value, the origin of clay beds, the nature of glazes, and the advantages of a vacuum cleaner are some of the questions leading into science which will arise if children are brought into an attitude involving intelligent selection and use of industrial products. Much study of this kind will lay a foundation of experience in material that later will prove valuable as data to use in organizing one's understanding of scientific laws. Such work should make for an inquiring attitude, an investigating tendency that is most wholesome for promoting open-mindedness.

In studying the manufacture and use of industrial commodities certain considerations are involved. The hygienic conditions in the production or manufacture and in the use of the commodity should be known. The conditions in the factory where a commodity is made, the effect of the size of type upon the eyes of the reader, the consequences of having a diet which is one-third or more cereal, the wisdom of wearing woolen garments when hiking, and the importance of sunlight in the bedroom, are some topics one might suggest.

The economic factors, especially in selecting and using commodities,

are significant if one would live efficiently. How much should one's essential clothing cost? What are the best cuts of meat from economic and dietary points of view? What should be done with waste paper? What is the most economical material for school dresses? Is milk an expensive food? These are questions that may be considered with interest and profit.

The social factors have been frequently suggested throughout this article. They scarcely need emphasis here, yet they should be listed among the important considerations in selecting and using. How much wool is produced annually? If it were distributed equally among the people needing woolen garments because of the climates in which they live, how much would each receive? What are the social implications of being a night worker? What social life do factory workers have? How many children are working in factories to-day? How many people work that you may have your orange for breakfast? What people of the world contributed to your food to-day? These are possible questions of interest and profit.

The æsthetic factors are of continuous importance in the selection and use of commodities. Wherever one goes he is an expression of a composition in line, tone, and color. His clothes are of moment to all whom he meets. The vase in which the flowers are put should be chosen with attention to the resulting composition, and children should have opportunity to make such choices. Usually, however, the teacher fails to see this learning situation and chooses the vase and arranges the flowers herself. The appropriateness of the thing chosen to the use to which it is put is not always recognized as an æsthetic quality. Young girls need to learn what constitutes a good-looking costume for hiking or for school. Silk hose are beautiful for some occasions but their beauty is relative. The element of relativity in beauty is an important one. The alert teacher finds it involved in many of the situations of child life.

The third phase of providing commodities is that of distributing them to the consumer. In the early stages of civilization barter was the method. He who had more wool than he needed exchanged some for grain which he lacked. With the development of quantity production and specialization came the need of buying and selling, and a medium of exchange was devised. The consumer came to be remote from the producer in the complex industrial and commercial system

that arose. This necessitated the development of elaborate systems of transportation—freighters, merchant ships, barges, freight trains, mammoth trucks, express systems, and parcel post. Even now, aëroplane shipment of commodities is being attempted. The stories of the merchant guilds, of the Yankee Clipper, of the pony express, of the Star Routes, of the first railroads, of the caravans of the desert, of Marco Polo's travels, of trade routes, and of merchant princes are of value in developing a sense of the progress that has been made in transporting commodities. Along with the development of exchange of commodities and the use of the labor of employees working for wages, came the needs for money, and the consequent development of coinage, banking, and finance.

SUMMARY

The social studies are concerned with the study of human experiences: (1) with the physical world as it conditions man's living; (2) with human relationships as they modify living; and (3) with the work of the world (*a*) in procuring raw materials as in mining, fishing, hunting, lumbering, and agriculture; (*b*) in manufacturing these materials into more usable products, such as foods, clothing, shelter, utensils, records, and tools and machines; and (*c*) in distributing these products to the ones who use them—the problems of transportation and commerce. Detailed experiences in each of these aspects of living will in time bring the child into contact with the breadth of a content which can represent the aspects of living one needs if he would understand life in its fullness and richness.

RESEARCH IN SCIENCE TEACHING

By S. R. POWERS

Professor of Natural Sciences, Teachers College

RESEARCH in science education is necessary in the first place to determine what people need to know about science, and in the second place to determine how the people (children in particular) may most economically and effectively learn what they need to know. In other words, the major problems are in the fields of the curriculum and of learning. And these two fields are by no means mutually exclusive, for the curriculum must set forth the major goals for learning, and it must in some measure array the learning elements which are essential to the accomplishment of these goals.

I

In the field of curriculum science may have some unique features, for it is a development of the modern period and the body of tested knowledge in this field is rapidly enlarging. It is said that Galileo (1564-1642) was the first to offer experimental evidence against the conclusions of Aristotle, and that in so doing he established what we now call the experimental method. Since Galileo's time the applications of the experimental method have increased with rapid acceleration, with the result that an enormous amount of new knowledge has been carefully tested by this method and recorded. It is appropriate now that the curriculum worker should inquire what there is in this new knowledge that is of consequence in general education and more specifically what elements of it are of most consequence. May understanding and mastery of it contribute in any considerable way to accomplishment of freedom from the bondage of ignorance and its attendant fears and discontentment? And may this accomplishment contribute to better adjustment of the individual to the conditions under which he must live? There is general agreement that the answer to these questions is in the affirmative, but it requires a carefully planned program of extensive educational research to determine, first, what large conceptions and generalizations are of most

consequence to liberal education; and second, the most effective teaching procedures to be used in building up in the mind of the learner an effective and functional understanding of these big ideas.

In this discussion it is assumed that science training is functional if it enables the learner to respond in ways that are satisfying to the stimuli that come within his experience. The stimulus may be one to which he must respond in order to perform a necessary task (keeping the batteries of a radio set in condition, for example), or it may be a stimulus to which he must respond in order that he may formulate a more satisfactory mental adjustment (interdependence of living organisms, for example). The first of these illustrations has been thought of as one which illustrates applied or practical values, and the second as suggesting a liberalizing value. It appears from analysis of instructional material that the so-called applied values have been most evident to educational workers. The evidence of this is in the emphasis upon them. In this presentation it is assumed that the liberalizing values, even though in some measure neglected, are not less, but possibly more, important. For practical purposes it seems likely that no line of division can be drawn between these kinds of values; for learning which enables one to care for his radio set intelligently is both practical and liberalizing, and learning which enables one to make a more satisfactory mental adjustment is both liberalizing and practical. Clarity, however, does require some distinction between these two kinds of values, even though they are not exclusive each of the other.

This period is distinguished from preceding ones by the fact that it is an age of applied science. Scientific developments have made present modes of living possible, and the maintenance of living standards in this complex civilization makes demands for intelligence in regard to the applications of science to the work of the world. One needs only to witness accomplishments in the fields of health and sanitation, the numerous fields of engineering, aeronautics, etc. The story of the airplane flight across the Pacific, with the whole world in continuous communication with the fliers until they landed in Australia, and of the flight of the dirigible across the Atlantic, may be told as dramatic episodes. But we are sobered by the question of what relation these episodes may have to educational values. The answer is not evident and the question may not be one of great importance.

Those who have read the newspaper reports of the flight have probably developed a healthy curiosity about many questions which may be answered through the study of science. The satisfaction of healthy curiosities may be properly accepted as an objective of science teaching, and a proper problem for research is to catalog these curiosities through study of the questions asked by children and by adults. The answer to the question of what one needs to know about applied science may be found in three considerations which are evidently not mutually exclusive: first, what is needed to satisfy curiosity; second, what is needed for the efficient performance of the daily tasks that are likely to be required of each individual; and third, what is needed for maintenance of health. These questions suggest important research studies and there are already at hand some notable contributions to them.

But it must be emphasized that science is functional for other than its so-called applied values. The findings of science have in them so much of potential influence that interpretation of the meaning of science and understanding of important generalizations from it must for liberalizing and cultural values be incorporated in a program of general education. On the liberal side this period is not clearly distinguished from others which preceded it. The masses of our population are still the victims of tradition, prejudice, and superstition, and unmindful if not unconscious of the methods of working which scientists have developed and employed in their researches to reveal truth, and of the great truths which their work has revealed. The intellectual attainment of a people may be to a large extent measured by the ability of its individuals to interpret the phenomena of their common observations, and this in turn is corollarial with the extent to which they are influenced in their search for explanations by superstition, mysticism, and ignorant practices. Common phenomena such as lightning, earthquakes, storms, and eclipses are no longer looked upon as mysterious afflictions visited upon the people by an irate deity. These are now seen as effects which are resultant from natural causes, many of which are well understood. Accomplishment of understandings such as these is of distinct educational value. It gives the learner a feeling of security in the presence of natural forces, and such understanding has gone a long way toward freeing mankind of the terrible fears with which the race was previously attended. Educational

practices must look to the attainment of sufficient appreciation of scientific methods to assure understanding of the fact that natural phenomena are manifestations of cause and effect relations. Furthermore, the educational system must develop for its educands a clear understanding in the more common phenomena of the relationship, or an ability to discover the relationship between the effect and the cause which produced it.

The findings from scientific study have enormously enlarged our mental horizon. Factual knowledge has supplanted erroneous beliefs and mythological explanations. Witness the progress from the status which prevailed when the common belief was that the earth was flat, the center of the universe, and the dominating influence of the heavenly bodies; to the present status when the movements of the heavenly bodies are more clearly comprehended, and when the earth is seen as but one of the planets of the solar system, the solar system as but one of an indeterminate number of solar systems constituting one galaxy, and our galaxy as but one of a vast number of galaxies distributed through a universe the dimensions of which are as yet incomprehensible. Attendant upon the discoveries that have revealed the true relations of the earth to other bodies has come an enormously enlarged conception of the immensity of space, of the duration of time, and of the age of the earth. These are illustrations of some of the important scientific conceptions. There is need for systematic research which will be directed toward the determination of other large conceptions and generalizations which may wholesomely influence social and mental adjustments. There is need for careful analytical study to determine the major conceptions and generalizations which science has contributed and there is need for an evaluation of these which shall determine the ones that are of most consequence to general training. It is not sufficient for us to say that science has completely transformed our manner of living. Curriculum workers must state as their objectives the conceptions and generalizations which have accomplished this transformation, and they must array learning experiences which will contribute the largest possible understanding of them.

Recent studies have made significant contributions to the definition of the objectives of science and to the means to their accomplishment. As part of his course of study project carried out in connection

with the Horace Mann School, G. S. Craig submits a list of objectives which guided him in the selection of content for the elementary school. His list was compiled from extensive analytical study and was evaluated by educated laymen. The statements were distributed on mimeographed sheets and the judges were asked to rate them on a scale ranging on the one hand from those of which they would loathe to be ignorant to those on the other hand which they considered to be of little significance to men in their respective walks of life. The following statements are among those which received high ratings on this scale:

The universe, including the earth, is very old.

The surface of the earth has not always had its present appearance and is constantly changing.

All life has evolved from simple forms.

Species have survived because by adaptations and adjustments they have become fitted to conditions under which they live.

Some others, such as the following, which are descriptive of the scientific attitudes, also received high ratings:

Man's conception of truth changes.

Hypothesis has a function in science.

Much knowledge remains to be revealed.

The report of this study is now available.[1] There is need of extension of this technique in order that there may be some more adequate definition, stated in simple declarative sentences, of what each of the special branches of science has contributed to the development of our civilization. Science has transformed our civilization, but the curriculum worker should state specifically, in so far as possible, the contributions from science that have accomplished the transformation. The man who is a student both of chemistry and of human problems may undertake to determine the curriculum in chemistry, and there is opportunity and reward for an expert of similar capacities in each of the divisions of special science. It should be clear that the objective of such research is to determine the contribution of the special sciences to general education and not to develop the special sciences for themselves.

[1] Craig, G. S. *Certain Techniques Used in Developing a Course of Study in Science for the Horace Mann Elementary School.* Bureau of Publications, Teachers College, Columbia University.

II

As already implied, the curriculum study must recognize the principles of educational psychology which relate to the question of how children learn. With the objectives of science stated in terms of large conceptions and generalizations which have been adequately tested for their educative value, we may next study the means whereby children may come to the largest possible understanding of them. It seems safe to say that however broad and complete our understanding of a scientific principle or conception is, we have come to that understanding as a result of a variety of educational experiences ranging from very simple ones toward those which are more complex. For a program of experimental teaching it would seem proper for the experimenter to analyze the large concept into the learning experiences by means of which he, himself, came to an understanding of the concept, and then to set his teaching experiment so that the learning experiences revealed by his analysis may be tested for their effectiveness for building up a similar understanding of the concept in the mind of the learners. In other words, the analysis will constitute the experimenter's hypothesis and he will test his hypothesis by controlled experimental teaching. Psychology teaches that large understandings are the result of association of simple learning elements into increasingly complex hierarchies.[2] Research should look to the determination of simple learning experiences which may be associated to form the larger conceptions which have definable educative values, and additional research should look to the placement of these educative learning experiences on grade levels in which the children are sufficiently mature mentally to grasp them.

How shall we teach the scientific attitudes and the scientific methods? It must be clear that one cannot teach a scientific attitude until the attitude has been objectified by a clear definition. May we say that a scientific attitude is developed from appreciation of the fact that man's conception of truth changes? If this definition is acceptable it would seem that the most effective way to develop this attitude is to take the learner through a variety of learning experiences which illustrate how man's conception of the truth respecting some

[2] The principles of educational psychology which are the background for this point of view are discussed in Gates, *Psychology for Students of Education*, Chapter XIII. They are applied in a recent study by Dr. Anita D. Laton, *The Psychology of Learning Applied to Health Education Through Biology*, Bureau of Publications, Teachers College, Columbia University.

particular thing (the age of the earth, for example) has changed. There is need for research which will reveal clearer definitions of the scientific attitudes and for research which will reveal the teaching situations by means of which the learner may come to a functional understanding of them. The same point of view is applicable to discussion of scientific methods. There is need for definition of the elements of the scientific methods which are functional for individuals who are not employed as special workers in one of the fields of science. There is need for caution that the enthusiast for science must not claim too much. It is unlikely that the detailed methods of scientific research will be of any consequence in the daily affairs of the man on the street. There is need for research which will result in a definition of the methods of scientific study which may be generally functional. Then, there is need for research which will reveal the learning situations through which the learner may come to mastery of them. It is suggested that the learner may arrive at an understanding of the scientific methods through study of situations in which particular methods have been applied, and that he will come to mastery of them if learning situations are set in which he is required (or permitted) to use elements of the methods, the definitions of which are clearly understood. It seems clear that more successful school attainment of appreciation of scientific attitudes and more complete mastery of some of the scientific methods are conditioned in large measure upon clearer definition of the desired outcomes. The psychological principle that learning is effective only when the outcomes of learning are made identifiable to the learner should be understod as one that applies to this as well as to other learning situations.

III

A clear definition of the desired outcomes from science teaching suggests at once the outcomes to be desired in teacher training. An illustration of an educational objective in science is to learn that species have survived because by adaptation and adjustments they have become fitted to the conditions under which they must live. It follows that an objective of teacher training is to give to the teacher in training the largest possible understanding of this objective. The teacher should have a comprehensive knowledge of the objectives; he should be familiar with a great variety of learning experiences which may con-

tribute to enlargement of the student's understanding of the objective, he should see the relations of this objective to others with which it is associated, and, in so far as may be, he should gain an appreciation of the social significance—that is, the educative value—of this generalization. The content of the teacher training program may be defined by careful analysis of the objective. The task in teaching is to accomplish objectives. The training should fit the teacher for the task that is his.

With this brief analysis which, it seems, suggests some of the ultimate aims of science education and of teacher training, it is appropriate to turn our attention to the teaching devices. Some of the teaching devices have had so much attention of recent years that there has been some tendency to look upon them as ends of education. One is led to wonder if some research is not needed to establish or deny what seems to be an assumption on the part of many teachers of physics and chemistry that a major objective of their courses is to make a laboratory notebook. But this objective is at once denied when the issue is faced squarely, and this as well as laboratory teaching, directed study, field trips, etc., is recognized as a means and not as an end. If the major premise of this article is accepted, then it must follow that the studies of methods of laboratory instruction must be revolved into studies which will define laboratory experiences and which will evaluate the learning that may be derived therefrom. There can be no acceptable general statement of which method of laboratory instruction is best. The fundamental question is, how may we set learning situations which are best for the accomplishment of definable objectives?

In connection with his work as chairman of the department of science in a large high school in New York City, R. E. Horton has made an important contribution to this problem of laboratory instruction.[3] He has shown specifically how laboratory experiences may be provided which will contribute to accomplishment of definable outcomes.

The problems pertaining to the laboratory notebook are similar to those which relate to the laboratory itself. It must be true, if the notebook has any place in science teaching, that its place is justified by the fact that it contributes learning experiences which are helpful for

[3] Horton, R. E. *Some Outcomes of Laboratory Instruction in High School Chemistry.* Bureau of Publications, Teachers College, Columbia University.

accomplishment of definable objectives. There is need for research which will determine what the possible learning experiences are, and for research that will show how these experiences may be made real for the learner.

Similar questions relate to the problems of directed study, the contract plan, etc. These are to be recommended, provided they incorporate devices whereby the teacher may most effectively provide the richest learning experience. Textbooks, tests, and the library should all be evaluated in terms of the same general principle. What learning experiences may each contribute which will result in more complete accomplishment of definable objectives? Extension of such study will result not only in the evaluation of past experiences, but in the definition of new ones.

The relation of learning experiences and objectives is such a fundamental consideration that it seems as if reports of investigations in which this relationship is not clarified were almost in vain. Efforts in education must be directed toward the accomplishment of worthy objectives. The fundamental educational research, therefore, is that which is directed toward definition of these objectives. After these have been defined subsequent research will discover and set forth the learning experiences which will result in functional understanding of the objectives. All research in the field of science teaching must be subservient to these two considerations.

WHAT STUDENTS IN CERTAIN LIBERAL ARTS COLLEGES TAKE FOR THE BACHELOR'S DEGREE

By CLARENCE LINTON
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AND F. B. O'REAR
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ONE of the most common criticisms of current higher education is that it lacks aim and purpose; and that, as a result, the student meanders through a maze of curricula offerings, sampling here and there without obtaining proficiency in any field of knowledge, but finally accumulating enough semester hours of credit to obtain the bachelor's degree. The writers recently conducted a study of subject matter taken by 640 graduates of 13 liberal arts colleges affiliated with the United Lutheran Church in America in an attempt to determine to what extent this criticism is justified, and the degree to which students of these institutions concentrated, or scattered, their work among the various offerings of the institutions from which they graduated.* At the suggestion of Dr. Clyde Furst and with the assistance of a special grant from the Carnegie Foundation for the Advancement of Teaching, punched cards and sorting machines were made available for more intricate, thorough, and rapid analyses of data than would have been possible by hand sorting and tabulation.

It was found that the graduates of these institutions took work in from 4 to 15 subject matter departments in high school, in 1 to 13 departments in the freshman year of college, in 2 to 13 departments in the sophomore year, in 1 to 12 departments in the junior year, in 2 to 13 departments in the senior year, and in 7 to 23 departments during the entire 4 years of college. The median number of departments in which work was taken in high school was 8.4, in the freshman year of college 6.9, in the sophomore year 7.4, in the junior year

* *Survey of Higher Education for the United Lutheran Church in America, Part III,* Chap. VII. In process of publication by the Bureau of Publications, Teachers College, Columbia University.

7.1, in the senior year 7.3, and in the entire 4 years of college 14.6. Students tended to take relatively the same amount of work in English, history, science, and foreign languages in high school and in college.

The chart on page 345 indicates the percentage of work taken in each of the major subject matter groups, and in each of the subject matter departments within the major groups.

The greatest quantity of work in any one subject matter department was taken in English when all English was grouped as one department. The amount of work in English represented 15.2 per cent of all work taken by these 640 graduates, but work in all foreign languages totaled 18.1 per cent of all work taken. The social studies were second only to foreign languages in total work taken, while science was taken in almost as great quantity as English.

The graduates of these colleges tended to concentrate their work in foreign languages, social studies, English, science, education, mathematics, and Bible and religion to the extent of 86 per cent of all work taken. Less than 14 per cent of their work was taken in vocational subjects, philosophy, general psychology, physical education, music, and art. The total amount of work taken in the last three subjects indicates their relative unimportance in the institutions studied.

Education was taken in such amount as to indicate that approximately 40 per cent of the graduates of these 13 colleges were preparing to enter the teaching profession. Assuming that a considerable number of the graduates of these institutions who did not take courses in education will later enter the profession of teaching, it is evident that these colleges are in a real sense teacher training institutions.

Courses in Bible and religion were taken more frequently than courses in any other subject except English, but the total number of semester hours taken was 5,128 as compared with 12,826 semester hours of English, 6,380 semester hours of history, 5,951 semester hours of mathematics, 4,800 semester hours of chemistry, and 8,667 semester hours in education. The median amount of work taken in Bible and religion by graduates of one institution was 1.6 semester hours as compared with 17.0 semester hours by another institution, from which it appears that there is wide variation in the provision for formal instruction in subject matter which may be considered of major importance for denominational colleges.

The graduates of these institutions took work in 1 to 7 new sub-

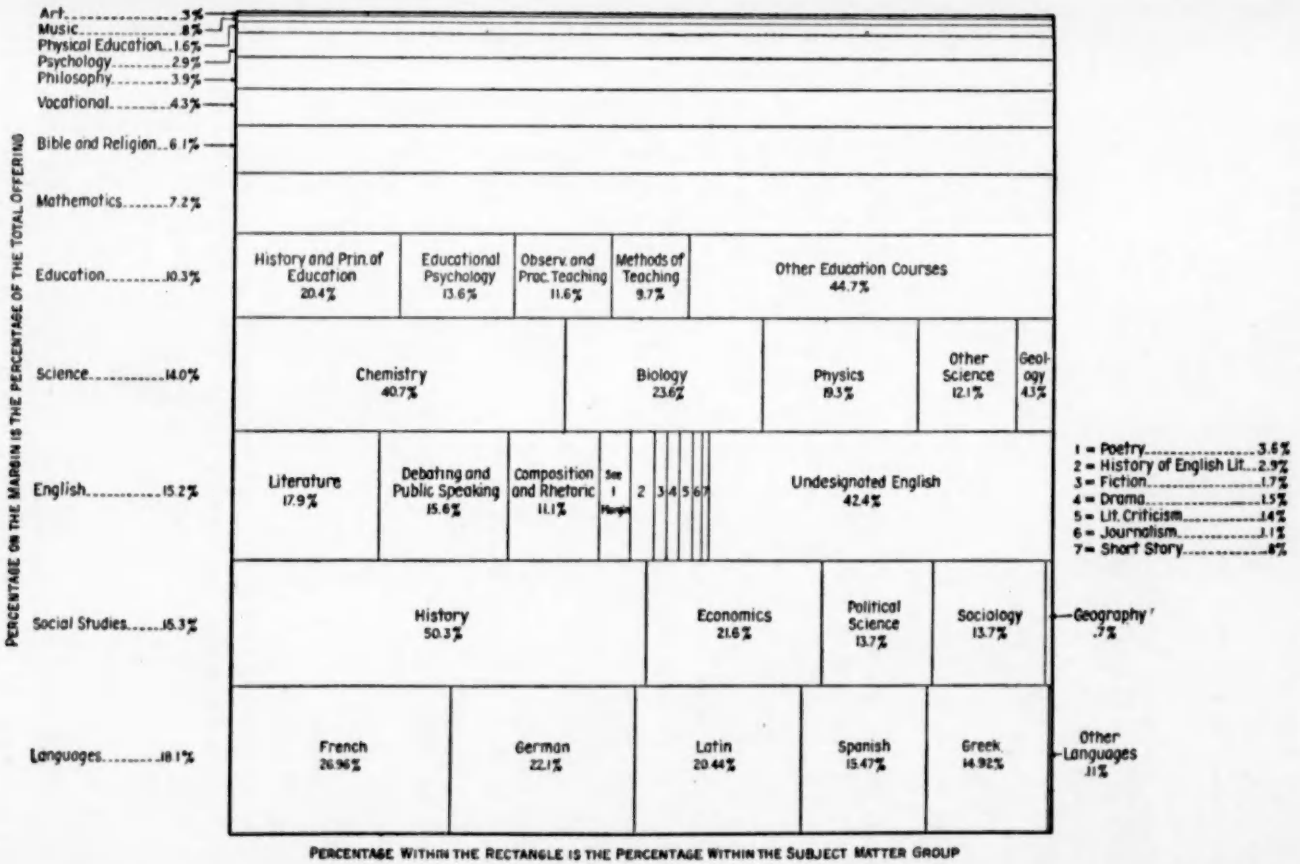

CHART 1. PERCENTAGE OF WORK OFFERED WITHIN DEPARTMENTAL GROUPS BY 640 GRADUATES OF 13 LUTHERAN CHURCHES

ject matter departments in the sophomore year, in none to 9 in the junior year, and in none to 6 in the senior year.

As should be expected from the foregoing there was little agreement in specific patterns of curricula taken by students, when all variables, including specific selection of subject matter departments, quantity of work, quality of work, and sequence of work, are taken into consideration. For example, not more than 3 students took identical curricula patterns with respect to any one combination of subject matter departments, irrespective of quantity and quality of work. When the factors of quantity and quality are considered for the total curricula offered by these 3 students there is much less agreement. There was, however, considerable agreement in patterns of curricula within the subject matter fields where the concentration was greatest. For example, there were 627 students who took 6 or more semester hours of English; of these 627 students, 398 took 6 or more semester hours of Bible and religion; of these 398 students, 330 took 6 or more semester hours of history; of these 330 students, 269 took 6 or more semester hours of mathematics; of these 269 students, 108 took 6 or more semester hours of philosophy; of these 108 students, 31 took 6 or more semester hours of general psychology; of these 31 students, 8 took 6 or more semester hours of courses in education, other than history and principles, educational psychology, observation, practice teaching, and methods of teaching; of these 8 students, 4 took 6 or more semester hours of science; of these 4 students, 1 took 6 or more semester hours of chemistry.

From another point of view we may say that the curricula patterns were common for these students to the extent of 6 or more semester hours of work as follows: In 2 subjects for 398 students, in 3 subjects for 330 students, in 4 subjects for 269 students, in 5 subjects for 108 students, in 6 subjects for 31 students, etc.

Little agreement exists between the quantity and quality of work taken; that is, students who received high marks for their work in a given subject matter department did not take more work in that department than students who received low marks. Graduates who received a considerable number of marks of a given quality type tended to receive marks of that quality type for all work taken.

There is little evidence of sequence in the work taken by these 640 graduates except in English, history, foreign languages, mathematics,

philosophy, Bible and religion, vocational subjects, and courses in education. In only 6 subject matter departments was the percentage of work taken in any degree of sequence more than 50 per cent.

There are wide variations among students and among institutions in the degree of concentration of work taken. The extreme range in the percentage of work taken in any 5 subject matter departments was from 36 per cent to 81 per cent, while the range in scatter is indicated by the fact that from 19 per cent to 64 per cent of the work taken by these students was scattered in 5 to 18 other departments. The general tendency, however, was to take 60 to 70 per cent of all work in 5 departments, and 80 to 90 per cent in 10 departments. It is the opinion of the writers that the degree to which students scatter or concentrate their work in these institutions is determined to a large extent by the offerings of the institutions. In some of the colleges included in the study the curricula offerings are very narrow, and as a consequence the number of departments in which work was taken by students was small. On the other hand, one of these institutions appears to offer so many courses, and its students scatter their work in so many subject matter departments, as to suggest the danger of jeopardizing the standards of the institution.

The study indicates that students concentrate a relatively high percentage of their work in as few as 5 departments, that the remainder of their work is rather widely scattered in many fields, that the proportion of work taken in the so-called *old-line* subjects (whatever the causal factors may be) is relatively high, that there is no significant correlation between quality and quantity of work taken in a given department nor between quality of work done and number of departments in which work was taken, that work done is taken with almost total disregard of sequence, that curricula patterns show some degree of identity within the subject matter fields in which total registrations were highest, but that the total curriculum followed by each student is practically an individual pattern, even if quantity is disregarded and consideration is given only to the list of subject matter fields in which work was taken. Whether these facts are true for the colleges of the United States as a whole cannot be determined until similar studies have been made of large groups representing a wider sampling for the country. The present study represents an effort at the development of a technique applicable to such a problem.

THE SERVICE BUREAU FOR CLASSICAL TEACHERS AS A TYPE OF ORGANIZATION FOR OTHER SECONDARY SCHOOL SUBJECTS*

By FRANCES E. SABIN

Director of the Service Bureau for Classical Teachers, Maintained by the American Classical League, at Teachers College

"WE who are about to live salute you!" What is wrong with this tempting oratorical beginning on the subject of the progress of Latin teaching is that Latin has always been "living." Its illnesses have been no greater than those which other subjects have suffered, and evidences of its vitality have always existed for persons whose eyes were open for educational values. Moreover, the fact that it has emerged stronger than ever from so honest and searching an investigation as was made by the American Classical League through its Classical Survey, which culminated with a Report in 1924, is only one of many proofs that Latin is not "dead" but, on the other hand, very much alive.

It takes a high degree of vitality to look facts in the face when they imply a drastic criticism of one's present procedure, and both courage and initiative to set about reform; yet this is what many teachers of Latin at once started to do when the Survey was published. This document was not concerned at all with the exploitation of Latin as such, and did not attempt to prove that it was worthwhile for all boys and girls in the American schools, but rather, with 940,000 pupils studying the subject, accepted the situation as it was. First, it aimed to discover by tests, opinions of experienced teachers, and professional studies just which of the educational ends claimed for the study of Latin were really valid and reasonably possible of attainment in secondary schools of to-day; second, it attempted to determine what probably prevented such an attainment; and third, it tried to suggest a pro-

* Reprinted by permission from *Educational Outlook*, November, 1928; School of Education, University of Pennsylvania, Philadelphia, Pa.

cedure which would produce more satisfactory results, basing this procedure upon such essentials as (1) a clarification of valid objectives, (2) a revision of the course of study, and (3) certain changes in methods of teaching.

No fair-minded person who reads Chapters III, IV, and V of the Report in which the above points are brought out (now issued again, but in condensed form, by the American Classical League) can fail to recognize the honesty of the investigators in pointing out results as they found them (some of them very far from what the friends of Latin wished them to be), and their sincere effort to pave the way to something altogether better in the way of achievement. It is highly gratifying to those who have assisted in the movement or have followed it with sympathy to know that its influence upon the schools of the country has been great. Countless Latin courses have been revised in accordance with the recommendations of the Report, one notable example being the forward-looking document known as the Revised Syllabus of Ancient Languages recently published by the State of New York. Quite as significant is the number of new textbooks claiming to be "in accord with the Classical Investigation." That the College Entrance Examination Board has recognized as valid one of the most important points in the reconstruction program and embodied it in its scheme of examinations is also noteworthy.

But the attempt to improve the results obtainable from the study of Latin in secondary schools did not end with the publication of the Report. The League saw the necessity of rendering some concrete aid to teachers in the field in trying out the idea proposed and in assisting as far as possible (and in some definite way) those who could not or would not deviate at all from the beaten path. It therefore organized five years ago the Service Bureau for Classical Teachers which has been functioning at Teachers College through the kindly hospitality of this institution. That this movement has been phenomenally successful is universally conceded by those who are in close touch with its activities. It is because the writer has a strong basis for her belief that such a Service Bureau is badly needed in other subjects that she is passing on through the medium of this article certain outstanding points in the way of organization and procedure, hoping that departments of English, modern languages, history, mathematics, and the sciences may find it possible to start something similar.

Of paramount importance, perhaps, is the fact that the policy of the Bureau is coöperative. It could not function otherwise in view of the lack of funds for paying salaries to trained Latin assistants. Ideas, suggestions, and material in concrete form are sought from the teachers of the country at large, covering the academic, the professional, and the pedagogical sides of this work. These, as far as possible, are kept in a large filing case in the Bureau, carefully classified, so that visitors can see at a glance where they can study the material in which they are most interested. This case is always accessible, but the contents cannot be taken from the room. Adjoining is a table where newer textbooks and other publications of value for background work are kept. Various types of illustrative material, such as pictures, charts, maps, etc., are displayed here and on bulletin boards with directions as to where they may be purchased. Much of this, by the way, is equally useful to teachers of ancient history and of English. A bookcase containing a sample classical library of average size is also in the room.

As far as resources permit, important material in the filing case as well as that from other sources is put in mimeographed form, or, if somewhat elaborate in its nature, is printed in leaflets known as *Latin Notes Supplements,* or in *Bulletins*. The mimeographed material of which the Bureau now has 345 items is lent for a period of two weeks without charge except postage. In case the borrower wishes to keep it, he pays 5 cents for each piece. The *Supplements* (40 of which are now on hand) are not lent but are sold for a nominal price, rarely more than 10 cents, and less in quantities. The eleven *Bulletins* range in price from 15 to 25 cents. These contain considerable material and often many expensive illustrations. All of the items mentioned above are listed as they are prepared in a four-page (sometimes eight-page) publication known as *Latin Notes,* which is issued by the Bureau eight times each year. At the end of the school year all the items are summarized in a printed leaflet, of which there are now four. These are sent out free of charge upon request and, since they contain all the titles of material prepared for circulation since the Bureau started five years ago, are invaluable to those who wish to know what is available for them in case they are seeking help, or, which is quite as important, what avenues are open to them for contributing ideas and material likely to help the cause of Latin teaching.

The *Latin Notes* contains, in addition to the column of announcements of material, short articles and comments which may be of interest to classical teachers, as well as occasional notices regarding new books. The subscription price is one dollar and with this is included membership in the American Classical League, of which Professor Ralph V. D. Magoffin of New York University, New York City, is president, and Professor Rollin H. Tanner (of the same institution) secretary. While there is no fee for the facilities afforded by the Bureau, those who make use of them are supposed as a matter of course (if classical teachers) to subscribe to the *Notes*.

Perhaps quite as useful as the information and help afforded through the mimeographed and printed material, is the exchange of ideas through the Correspondence Department of the Bureau. Each month the Bureau receives a very large number of letters which offer countless opportunities for intelligent coöperative work in the interests of Latin. Letters which the director feels can be answered better by specialists are forwarded to certain coöperators with the request that information be sent directly to the writer. Of course many communications are concerned only with requests for material and need no answer other than the package. To give a general idea of the character of the requests, the following summary is inserted.

TYPES OF REQUESTS THAT COME TO THE BUREAU

What correspondents want:

1. Information concerning equipment—books, pictures, slides, maps, models, etc.
2. Material for classical clubs and programs; also exhibits.
3. Ways for securing interest on the part of the pupils.
4. Courses of study for various types of schools and appropriate textbooks.
5. Supplementary work for more able pupils.
6. Details of academic interest in connection with the background of classical authors read.
7. The Latin Investigation Report.
8. How to correlate Latin with other subjects, especially with English.
9. Information about the project method; the laboratory method; the socialized recitation; the direct method; the proper use of oral Latin; and details of teaching in general.
10. Methods of teaching special points, such as vocabulary, prose, syntax, forms, translation, scansion, etc.

11. Information concerning Latin in the Junior High School.
12. "First Aid" (many calls from inexperienced teachers for helps of any kind).
13. Material for giving courses for the training of Latin teachers.
14. Standardized Latin tests.
15. Material for starting a state or local service center.
16. Names of speakers for meetings.
17. Names of persons who are qualified to write textbooks.
18. Ideas for publication in school papers.
19. Information regarding latest College Entrance Requirements.
20. Information on the value of the classics.
21. Information concerning the Summer Session at the American Academy in Rome, and graduate courses in Summer Sessions in this country.
22. Information about the Service Bureau.
23. Ideas for a paper to be prepared for a classical meeting.
24. Statistics concerning the classics as taught at present and in recent years, or their standing in other countries.
25. Names of persons who can fill responsible positions in Latin departments, also inquiries regarding vacancies.
26. Inquiries from publishers as to persons who can write a book on "Methods of Teaching the Classics"; also requests to pass judgment on certain manuscripts sent in for publication.
27. Advice concerning procedure in difficult and discouraging situations, more or less personal in nature.
28. Criticism of some enclosed plan of procedure which may have great significance in relation to the teacher's future work.

In closing what she hopes may be an article of practical value to those who are desirous of starting a Service Bureau in a subject other than Latin, the writer feels that she should warn the enthusiast to think carefully about his resources before entering upon the project. Even moderate success is dependent upon finding a person to serve as director who can give his entire time to the work; and even then he must be possessed of vitality far in excess of that granted to the average person. He must, moreover, be a scholar and be in touch with the university side of his subject. At the same time he must have had years of experience in the high school classroom, and accordingly have an intimate acquaintance with boys and girls, as well as a first-hand understanding of conditions under which the average teacher must work to-day. It goes without saying that he should have sufficient clerical assistance and proper quarters.

The account given above does not include a most desirable feature and one that is doubtless essential if the idea of a Service Bureau for a high school subject is to mean all that it should as time goes on, namely, a research department for making special studies. But such an enlargement is expensive and needs a large fund for its maintenance. It is still an unfulfilled dream of the Service Bureau for Classical Teachers. But if the idea of establishing such bureaus for important secondary subjects could be brought to the attention of the proper persons, why should some leading university not succeed in securing an endowment of a million dollars for equipping and carrying on Service Bureaus for teachers in the secondary schools? We hear much about American wealth. It should not be impossible to secure some of it for a movement as useful to education as the one with which this article is concerned.

THE CONTRIBUTION OF ECONOMIC GEOGRAPHY TO THE PREPARATION OF A TEACHER OF GEOGRAPHY

By J. RUSSELL SMITH

Professor of Economic Geography, Columbia University

THIS address by Professor Smith was given at the Conference on Geography, one of the Group Conferences held during the National Conference on Education which met at Teachers College, April 10 and 11, 1928. Mr. DeForest Stull, of Teachers College, presided at this Meeting.—EDITOR.

DEFINITION OF GEOGRAPHY

I ONCE heard a learned man give a lecture on the geography of toads. It was interesting, and it was geography. What is geography?

Fortunately there is now a general agreement as to what geography is. Even our hard rock colleagues, the geologists and physiographers, agree with the rest of us that it is the science of relationship, the relationship between the earth and the life that lives upon the earth—not merely the study of life, not merely the study of the earth, but the study of the relationship between them. Therefore, it is evident that this definition is wide enough for toads, termites, trees, and lichens, as well as for the species that is most given to egotism.

Geography is a huge subject. Plainly one must know the basic facts about the earth and about life before one can study their relationship. To show the field we need a diagram something like this:

Study of The Earth		Study of Life
		Plants—Botany—Plant Geography
		Animals—Zoölogy—Animal Geography
Earth as a Planet		Animal Geography studied with reference to animals
Land—Physiography	Relationships between	Geography of Camels
Water—Oceanography		Geography of Whales
Air—Meteorology		Geography of Polar Bears
Climate—Climatology		Geography of Man

This subject is so vast that no single mind can comprehend even a substantial fraction of it. Therefore, we are forced immediately to neglect most of it and select that which is essential for our particular purpose. For the schools in America the goal is simple. We are all trying to study the geography of man. While this goal is simple, its attainment is not simple.

In brief outline a study of the geography of man may have its subdivisions indicated as follows:

Geography of Man or Human Geography
- Physical Geography
  - Military Geography
  - Geography of Transportation
  - Other Subdivisions
- Economic Geography
  - Industrial
  - Commercial
- Political Geography
- Historical Geography

What is physical geography? To answer this question, I will select an illustration from one of its many definite phases. I present an example of the influence of topography on military operation, a subject so amply treated by my colleague, Professor Douglas W. Johnson. In his book, *Topography and Strategy in the War,* he presents one map which every geographer should examine in order to see the far-reaching influence of apparently simple things. That map (Fig. 1 in the book) shows Paris lying in the center of a basin surrounded by outcropping strata of limestone. These outcrops make bluffs, concentric rings of bluffs or cliffs facing away from Paris. These ranges of bluffs are almost perfect natural defenses against bodies of troops. Field artillery on the tops of bluffs can mow down troops on the plains below as they advance toward the base of the bluffs. Therefore, these limestone outcrops, lying in concentric rings, are natural fortresses. To make defense more perfect there is often a river at the base of these cliffs. One of these streams bears the well known and suggestive name of Marne—the place where the German tide was turned in 1914.

The Germans knew well that this combination of cliff and stream is an almost impregnable barrier to an army advancing toward Paris

from the east. Therefore, the Germans in invading Paris had a hard choice. They had to face defeat in attempting to cross the cliffs, or to go around, which involved crossing Belgium. Although the Germans knew this would bring both Belgium and England into the war, they took the risk rather than attack the French on two or three concentric ranges of limestone cliffs with natural moats at their bases. Therefore, it seems not unreasonable to say that some outcrops of limestone in France brought about the invasion of Belgium and its long train of consequences.

This is an effective example of one of the phases of physical geography in some of its military and political effects. I submit it as an example of relationships. I cite only this one example because I am making a definition, not writing a treatise. Many examples might be cited in physical, industrial, commercial, political, and historical geography, and in the geography of a great number of plants and of animals.

Concerning definitions I wish to make one more point. I desire to rescue that good term, political geography, from undeserved confusion. In some quarters the belief persists that it is political geography when the book is named geography and the subdivisions of the book are political entities (countries) such, for example, as France. Now it is widely known that onions are still onions even if we put them into the potato basket. Similarly there is no magic in the words *geography* and *France* that transforms into political geography a miscellaneous collection of descriptive statements about France and its people. On close analysis fifty or one hundred statements about France are likely to illustrate many different kinds of geography, and some will have no geography at all. Geography, let it be remembered, is the study of relationships between the earth and its inhabitants.

Political geography is the study of those relationships which present themselves as problems having origin in the geographic elements of the environment and requiring solution by political action. Fortunately we now have a real book on political geography—Dr. Isaiah Bowman's *The New World* (1928 edition). Be sure that you get the new 1928 edition. It is one of the short list of necessary basal books for the shelves of those geography teachers who do not allow themselves to stagnate.

THE ELEMENTS OF GEOGRAPHY

In our American schools, geography is the study of man making a living—the study of the relationships between groups of men and the earth, especially the part of the earth where they live. A large part of it must be economic geography, the study of industry, commerce, and the resources from which they spring. To understand this complex, we need many elements. Plainly we need physiography. We are, of course, continually using plant geography and animal geography. Examine a few textbooks and you will also see that we need and use economics and history.

Because it is necessary for geographers to use many of the facts that underlie other sciences, it has been said by some that geography is not an entity, but merely an aspect of other subjects. Not so! When a geographer uses facts that are also used by historians, economists, and specialists in other fields, he does not cease to be a geographer. Neither does the economist cease to be an economist because he uses some facts of geography or history. The architect does not cease to be an architect because he uses mathematics and physics. He is an architect because he plans a house, and the geographer is a geographer because he studies the relationship of some of the inhabitants of the earth to the earth on which they live. Therefore, anything is proper grist for the geographer's mill that helps to explain the relationships between men and their bit of the earth.

THE AREAL UNIT FOR USE IN THE STUDY OF THE GEOGRAPHY OF MAN

Geography in the elementary school is the study of men in a place. At once the question arises, What place?

We have here two concepts to reconcile. The idea of place as the location where men live, and the other idea of an environment to which men may have a "relationship." What is the environment to which men have a relationship? It is not merely a place, as a spot of location. It is rather an area having some kind of geographic unity. The progress of science has been a process of separating masses of fact into groups or classes having some kind of unity.

We cannot study the geography of the whole human race at one time because the geography is not one unit. It is many units. Men live in such a great variety of places and in such a great variety of

ways that *there is almost nothing that can be said about the whole earth as the home of man.* If we try to tell about the earth as the home of man, we are promptly forced to make a hard choice. Either we will bring forth our facts without order after the fashion of drawing numbers by lot, or we will attempt some kind of subdivision. That is true in studying the *earth* or *life* or the *relationships between the two.*

This problem of subdivision of the earth for the study of geography is a very old problem. It has been faced in many ways, and the end is not yet. Here are some of the current solutions of the problem:

1. *Geography by Continents.* Continents are very important in first learning of place names and skeleton facts of location. They are like the multiplication table to mathematics; but when it comes to *relationships,* there is little that can be said about continents *as continents.* They are like the world. They have no uniformity over their whole surfaces. Most of them include such complete extremes as swamp to desert, from very hot to very cold.

2. *Geography by Countries.* Countries are units of the earth's surface about which we are often forced to think, but from the geographical point of view they usually lack unity. National boundaries are often the results of the most arbitrary whims and accidents of history. Thus, before 1918 we were teaching children about Austria-Hungary, Montenegro, and Serbia. Now the map contains no such names. We are reading instead about Austria, Czechoslovakia, Hungary, Rumania, Jugo-Slavia, or to be more exact, the Kingdom of the Serbs, Croats, and Slovenes.

3. *Geography by Problems.* The study of problems presents still another method of considering man in relation to place. A host of examples might be cited. I mention the Mississippi River flood, the foreign trade of some particular country, or the cyclone lands as emphasized in Huntington and Cushing's *Principles of Human Geography.*

4. *Geography by Industries.* An industry is another basis of unity by which man has been studied. Perhaps someone might call this a part of the problem method. Examples of this may be seen in J. Russell Smith's *Industrial and Commercial Geography* (new edition 1925).

5. *Geography by Regions.* A region is an area having some uniformity given it by nature or by man. As examples of regions I will submit the following:

a. The United States Federal Reserve Bank has divided the United States into Federal Reserve Banking regions as shown by a map which can be secured from the Federal Reserve Board, Washington, D. C.

b. The United States Forest Service, Washington, D. C., has prepared a map of forest districts of the United States. The map is used by the Bureau in studying problems in forestry and in planning for the supervision of its work. These regions are determined by consideration of the types of forest and of physical access to them.

c. Dr. O. E. Baker, of the Bureau of Agricultural Economics of the Department of Agriculture, has divided the United States into regions, each having throughout its limits a similar type of agriculture. This map is well worthy of the attention of any teacher or student of economic geography.

d. Dr. J. Paul Goode's atlas, which every teacher should own, divides the world into a great variety of regions such as areas having a given range of temperature, given amounts of rainfall, rainfall at the same season, areas having similar type of vegetation, and many others.

e. Professors Jones and Whittlesey of Chicago, in their *Economic Geography,* publish a map dividing the world into seventeen type regions, each having a similar *type of climate.* In this case a type of climate is accepted as a type because it influences in some important way the industries that man can prosecute within it. Therefore, climates are classified by economic results rather than mere atmospheric phenomena such as temperature or rainfall.

f. Other geographers, carrying still further the philosophy of Jones and Whittlesey, divide the earth into *human use regions,* not limiting themselves to climatic elements alone, but selecting areas that, for any cause, have some similarity for human occupation and use. Examples of this are Unstead and Taylor's book, *General and Regional Geography,* and *North America* by J. Russell Smith.

Shall we study geography by continents, by countries, by problems, by industries or by regions?

It is not necessary to draw comparisons here between the desira-

bility of these five different ways of studying man in relation to place. I present the five because they constitute a part of the problem upon which the geography teacher must work. Each of the five methods may be the best method for some particular investigator, teacher, place, problem, or group of pupils. It is unquestionably true, however, that the presentation by regions is being used more and more by persons who are studying human activity.

THE CONSTANT GEOGRAPHY AND THE CHANGING GEOGRAPHY

In preparing to teach school geography by any method the teacher needs a good understanding of economic geography. This is fundamental. Methods may vary, but geography itself remains a constant with one body of knowledge that remains unchanged—the laws of nature. Geography has also another body of knowledge which is constantly changing with the activities of man. Therefore, the teacher of geography is always needing new material.

How shall the teacher acquire economic geography? This is a very important question for one who is preparing to teach geography, and it is a question that has not received enough attention from those who are giving their time to geographic study. First we must ask, How much geography does the teacher plan to study? There can be no approach to a plan of study until this question of amount is answered. Perhaps my point can be made clear by considering a subject that is not quite so close to us. Let us take physiology. Some acquaintance with physiology should be a part of the general education of a person who leaves school at the end of the high school, or of the person who leaves school at the end of college, or of the person who leaves school with the degree of Doctor of Medicine.

We can all agree quickly that the physiology studied by the man or woman who finishes formal education in the high school should differ greatly from the physiology which is a component part of the training of a Doctor of Medicine. The incipient physician spends years in laboratories and dissecting rooms, mastering with minute and intimate thoroughness the structure of the human anatomy. This is as it should be, for he is to spend his life in the practice of the medical profession where, every day, life or death may hang upon the decisions he makes.

Is the teacher of geography to study this subject with the thoroughness of one going through college, with the thoroughness of one getting a Master's degree, or with the thoroughness required for the degree of Doctor of Philosophy? The analogy of the physiology holds perfectly for the student of geography. This means that the subject must be taught in different ways in order to meet the different requirements.

CULTURAL OR PROFESSIONAL TRAINING?

Perhaps the simplest classification of thoroughness is found in the contrast between teaching a subject as a part of a general education and teaching a subject for specialized professional training.

It is one of the weaknesses of American education that this contrast between cultural and professional courses is not clearly recognized in many of our college curricula.

The chief reason for this is that the American college professor so often counts his own success not by the hundreds to whom he gives a cultural appreciation of his subject, but by the two or three whom he inspires to follow in his footsteps and be other professors—fellows with himself, a sweet comfort! Therefore, his courses are made and his life is lived for the two or three. Look at the curricula of some of our colleges. As geographers we can perhaps see this bit of philosophy better in some other subject, say, history. Why study history, and if so, how many courses will you take? It depends upon your objective. If you are studying history with the idea that you are to be an engineer or a physician or a teacher of English or a citizen of the United States, you need to take it in a very different way from that required by the prospective professor of history. Some colleges have two or three courses in Medieval History, several courses in English History, one on the French Revolution, and the short period of American History is divided into three or four courses. Altogether there may be twenty or even thirty courses. This is perhaps excellent preparation for the coming professor. It was made for him, but what about all the others who do not wish to enter the teaching profession?

No wonder that H. G. Wells set the historians into a frenzy when with his *Outline of History* he threw a bombshell into their midst. He dropped into millions of (historically) nonprofessional

minds the idea that the educated mass needed a general view of history, namely, one or two courses covering the whole field instead of the twenty-four courses for the would-be professors.

This situation of curriculum for the young professor but not for the citizen is found in almost every subject in many of our colleges. Therefore, the reign of collegiate inefficiency will continue until the instruction in all important subjects is divided into the two methods, *cultural training* for the persons *who want a general education in that subject,* and *professional training* for persons *who want to specialize in that subject.* Before this can happen more students as well as faculties must become aware of this twofold objective in education.

PROFESSIONAL TRAINING IN GEOGRAPHY

The person who seeks professional training in geography leading to a Doctor's degree needs a systematic layout of courses including thorough instruction in the following: general geology, explaining geological processes; historical geology, describing the building up of the continents; physiography of the land, including special training in the reading of topographical maps; meteorology; climatology; oceanography; economic botany and plant geography; zoölogy and animal geography; some economics; some history; some anthropology; economic geography; the study of particular regions, continents, and countries; political geography.

For the person who stops with a Master's degree there is not time enough for such a thorough and systematic study. The course must be shortened for the Master's degree.

For the person who graduates from college with some geography the instruction in that subject must be still further shortened.

This shortening should not be merely the omission of certain large parts and the consequent disproportionate study of certain other parts. You do not make a pony by getting a few parts of a big horse. You do not get an effective citizen's training in physiology by spending ten days in a medical school dissecting room. You cannot have an effective two-course or three-course or four-course training in geography if you take a sector of the systematic training prescribed for a Doctor of Philosophy in that subject.

A study of the catalogs of various universities shows that we have in America the possibility for the study of geography in close accord

with the three classes of needs above indicated—namely the Bachelor's degree, the Master's degree, and the Doctor's degree. But what do you want? Everyone knows that it is expensive and wasteful to replan a house after it is under construction. The same is true with an education. The previously mentioned analogy of the physiology shows that. It is highly desirable that an education in geography should be planned in advance, otherwise it may be unbalanced and accompanied by wasted effort.

PROGRAMS OF STUDY

By HELEN PARKHURST

Children's University School, New York City

THIS address by Miss Parkhurst was given at the Conference on Elementary Schools, one of the Group Conferences held during the National Conference on Education which met at Teachers College, April 10 and 11, 1928. Dr. J. Cayce Morrison, Assistant Commissioner for Elementary Education of New York State, presided at this Meeting.—EDITOR.

I AM particularly grateful to the chairman for giving me a topic to my liking, especially since the topic he has selected frames an idea which I have worked over for many years. I suddenly realize that I have never properly set forth this idea for want of an articulating and classifying topic. "Programs of Study" mean just what the words indicate. Suppose, for instance, he had given me "Curricula"—at the outset I should have been at a disadvantage and possibly misunderstood, because you know (or perhaps you don't) that it has been said that I am not interested in curriculum. May I digress sufficiently to explain this situation.

I am very much interested in the laws of learning and all those conditions in the school which not only make learning possible but which make *not learning impossible.* There are great curriculum makers, masters of content, really learned people for whom I have great respect. Being able to take advantage of their findings and realizing that single, individual efforts are necessarily limited, I restricted myself to fields along lines of my training and greater interest. I have tried faithfully and continuously to preserve the point of view of the learner and have consecrated myself to the study of how the learner attacks his problems and what conditions facilitate his attack.

If you say, "Do you consider curriculum important?" I answer most emphatically, "Certainly." If you say, "Are you interested in curriculum?" I reply, "Yes," and knowing that curriculum is a better-cared-for field than conditions of learning, for instance, I say little. There are curricula and curricula!

Let me illustrate. In the Japanese language there is a word spelled h-a-s-h-i. The same word with the same spelling has four very different meanings. They have another word, "sodeska," which corresponds in general to our expression, "really." By a change of inflection you show dismay, surprise, chagrin, almost any emotion. One of the four meanings of "hashi" is "bridge." Suppose I am talking to a Japanese and I use the word "hashi." He looks puzzled and confused because I have said "chopsticks" when chopsticks are irrelevant to our conversation. Or I say "hāshī," which means "end." I then try "há shi," and I have said "beak" or "bill." I am exasperated and try again, and happily say "hâshi." He nods his head and says "Hâshi,—oh, sodeska—*bridge,* bridge!"

You say "curriculum," I say "yes." You say "subject matter," I pay little attention. You say "project curriculum," and I catch "project," and I say "Curriculum? Yes, I am interested in *curriculum.*" I am so interested that if at this moment I were where I should prefer to be, I would be in the conference on curriculum.

But programs are my hobby, because programs are the vehicles for curriculum; they give or fail to give right conditions for learning. Bad programs can ruin good curriculum, causing fatigue, over-stimulation, or even pure boredom, or they can be so flexible that they are like Goldilocks who found one of the three chairs "just right," because programs can be such that they provide for the class, the school, and at the same time for the individual.

Social contacts are most important factors in school life. We can not have a democratic social life unless, as Dr. Dewey points out in *Democracy and Education,* we "make it not only possible for each individual to be an intelligent participator in his immediate group, but keep the various groups in such constant *interaction* that it is impossible for any individual or any group to presume to live independently." Programs usually provide for groups but seldom provide for continuous interaction. We must provide for such interaction because by so doing we shall safeguard our social and community school life. Dr. Dewey has also said, "It is the business of the school to set up an environment in which play and work shall be conducted to facilitate desirable mental and moral growth," but he adds, *"It is not enough to introduce plays and games, handwork and manual exercises, for everything depends on the way in which they*

are employed." Programs control these "ways." Programs enrich or restrict the uses of the environment itself. Personally, I feel that much of the "hodge-podge" in curricula could be avoided by getting more activity into the curriculum and by eliminating some of the extras. Good programs will do this.

My hobby is a vehicle which transports curriculum with a minimum of effort, waste, and nervous strain, and with a great deal of satisfaction and joy to pupils. This vehicle could quite properly have been called a "Program of Study," but in 1911 I named it "The Laboratory Plan" and in 1918 renamed it "The Dalton Laboratory Plan."

I should like to show you the programs of this plan; for the school, for the individual, and for the instructor. They are so simple and flexible that if the underlying principles of work are not clear and the accompanying technique completely understood they will not appear useful to you.

The Dalton Plan, or program, hinges upon three principles: 1. Freedom. 2. Interaction of group life. 3. Budgeting of time.

Naturally the program, being a vehicle, must transport curriculum, regarding which I will say only this—that in our school we make it a rule first to *ascertain the needs* of our children and *then* to see that these same needs are satisfied. If you are curious about our curriculum, I will let you in on a secret. Twelve years ago when our New York laboratory school started, the needs of the children were very different from the needs of these same children now. These children have grown; their needs have changed and enlarged. Satisfaction of some needs has always immediately created new needs to be satisfied. As curriculum always represented mental food to satisfy real needs of a particular group of children it has naturally changed rapidly in these years. Our programs were so flexible that children grew rapidly, and curriculum, being the handmaiden of need, grew spontaneously, until to-day we ourselves scarcely recognize our beginnings. To-day we have a curriculum made up of related projects, and we are *very near* to a curriculum which for any single grade will mean annually one all-inclusive project. But we sincerely feel that as programs control environment our *program* was the real releaser of new needs and the true producer of our curriculum. We cannot possibly, under our conditions, use the same curriculum from year to year.

To refer to our principles,—to-day every sane person concedes *freedom* to be a means and not an end. We give it to liberate children from bad habits; to permit growth; and to eliminate anything which impedes the child's complete development. A freedom which permits more or less time according to need and permits an adjustment of this time daily.

Interaction of group life with us means the hobnobbing of younger and older pupils; varied contacts; an organization so social that the same laws of movement and interest which govern community life outside of school are apparent as functioning in the school community. Individuals are not isolated and taught separately according to any doctrine of pure individual instruction, but individuals are responsible, functioning members of groups, who even when working individually to satisfy a need, or working to correct a weakness or doing research, do so with an attitude so social that they leave the group only to be able to bring back a contribution to it. The conditions are such that each individual accepts the responsibility of the consequences of his activity and even the consequences of his thought.

To quote Dr. Dewey again: "The manufacturer is as truly socially guided in his activities when he is laying plans in the privacy of his own counting house as when he is buying his raw material or selling his finished goods. Thinking and feeling that have to do with action in association with others is as much a social mode of behavior as is the most overt coöperative or hostile act." We must remember that very often external signs of activity, especially inner activity, are lacking and that a "merry-go-round of motion" sometimes destroys complete social activity of a high and inspired order.

Individuals are not responsible at any particular age—that is, they do not merely *"turn responsible."* I am responsible, or you are responsible, to the degree and measure that the conditions of our environment have provided adequate training. It is true that contacts do often incidentally, sometimes accidentally, develop in one a sense of responsibility, but as school is a learning and training ground, we must provide conditions which will assure a real training in responsibility and make escape from this training impossible.

As to budgeting time, most school programs *schedule time.* It is scheduled for classes days in advance, as if each and all individuals in any given class had identical needs. The curriculum must be ar-

ranged and organized to promote and provide for intellectual growth, but the *program governing the conditions* in which that curriculum is set up must permit of a budgeting of time in such a fashion as will assure a development of each individual. This means that although a group may all be engaged with the same curriculum-idea, the individuals of the group will be permitted also to distribute their school time, and to use the school time as their individual needs demand, keeping in mind the fact that it is only through the satisfaction of individual needs that we increase the strength or enlarge the experience of the group. A group curriculum cements group life because it provides joint activities and joint experiences, but energy and time, strength and weakness, fatigue and interest are separate problems and cannot be decided and scheduled in the same fashion that curriculum is organized and outlined. Needs change daily: they differ in accordance with temperament and growth, and the actual experiences of consecutive days make a prelude which creates new changes in programs, both in management and in use of environment.

I should first like to show you our school program. All of our intellectual work is done before one o'clock, with practically no home work up to the senior high school. With a school year of eight and one-half months, being a member of the State Board of Regents, we must accomplish what is done in a public school in ten months. In addition to this fact we really emphasize art and music, and we have besides the common fundamentals, French and literature (in addition to English), and, from the Fourth Grade up, *real science.*

I have attempted to show you how effective these programs are. Of course they must be understood, or else the ending will not be that "they lived happily ever after," but rather something like what happened to a little girl in our nursery class. This child of three, a proud possessor of a huge pot of bright paint and a brush, announced, "I'm going to make a bird." Evidently announcement was not sufficient, for she daubed away for some time and then, exasperated, stood back and surveyed the result. With a puzzled questioning look she approached the teacher and said, "But it *doesn't* make a bird."

And so it does depend not only upon whether or not you possess an idea but also upon a carefully worked out and flexible program, a program that you have made your own, if you would make a bird!

NEW STUDIES IN EDUCATION

MEASURABLE OUTCOMES OF INDIVIDUAL LABORATORY WORK IN HIGH SCHOOL CHEMISTRY *

THIS study of laboratory practice in chemistry presents a new point of view and a new method of attack on a well-worn but vexing problem in science. Previous studies, such as those of Coop-rider, Kiebler and Woody, Wiley, and Carpenter, sought to measure success in terms of written tests. This study questions the validity of this means and offers a novel but well-validated group of manual performance tests for measuring the abilities under consideration.

The experimental program, which covered a period of two years, was carefully planned and controlled. Besides presenting some rather astonishing facts and some new techniques of measurement in science, the study offers possibilities of usefulness as a guide to experimentation in other fields of instruction.

To quote the author, "The general purpose of this study is to arrive at a rational view of what may be expected from individual laboratory work in chemistry through an experimental study of some of its alleged outcomes. The problem arises from the very great diversity of practices in the use of the laboratory; and from the apparent disagreement among recent authoritative recommendations as to the proper function of the laboratory. These authorities are: The Committee on Reorganization of Science in Secondary Schools (Bulletin No. 26, U. S. Bureau of Education); The New York State Regents' Syllabus in Physical Science (1926); The Report of the Committee of Chemical Education of the American Chemical Society.

"This study aims to evaluate typical, recommended practices, especially the author's adaptation of the 'problem method'; and to test experimentally their relative attainment of the goals: Information, Manipulative Skill, Ability to solve perplexities of a chemical nature."

Among the significant features of the study may be mentioned the large number of pupils in the experimental groups (over 1200); the repetition of tests with different groups for purposes of verification; a detailed and validated analysis of laboratory manipulative techniques; a practical, experimentally-tried plan for utilizing the laboratory by the "problem method," which involves a plan of instruction in scientific thinking at the high school level. Especially noteworthy are the various well-validated techniques for testing manipulative abilities and abilities to *do* chemical tasks in the laboratory.

The author seems to establish (1) that written tests are poor instruments for measuring abilities in laboratory work; (2) that demonstration work and

* By Ralph E. Horton, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 303.

individual work have not conflicting, but complementary functions in a course of chemistry; and (3) that if skill in manipulation or individual initiative (resourcefulness) in devising or performing experimentation is a desirable goal of instruction, the traditional practice of following directions from a manual should be discontinued. As a whole the study seems to be based on a sound psychology as well as a practical understanding of the science situation, although some of the facts presented appear to upset some of our time-worn ideas of science teaching.

In conclusion, to quote from the summary, the author says, "We were launched on this investigation by the need of deciding for one school how to utilize the laboratory most profitably for instruction in a course of general chemistry." The study itself is thoroughly consistent with this purpose. The attack on the problem seems to be without bias, to be statistically sound, and to offer some facts and worthwhile proposals which, it is to be hoped, may lead to a way out of a situation in science teaching which has become almost an *impasse*.

THE INFLUENCE OF INTELLIGENCE UPON CHILDREN'S READING INTERESTS *

IT HAS been advocated that dull, average, and bright children need not only to be permitted different rates of advancement in learning, but that they need different situations and particular adaptations of subject matter. Do dull and superior children wish to read about the same things? Are the interests in reading materials of children of average intelligence similar or markedly dissimilar to those of greater and less intelligence?

GENERAL PROCEDURE

(1) A body of material, consisting of thirty poems and stories, was selected in the light of previous studies of children's interests to contain, among other elements, surprise, plot, fancy, action, animals, play, adventure, heroes, home life, kindliness, service, information, and humor. These selections were then classified into six types, as follows: A, Familiar Experience; B, Unusual Experience; C, Humor; D, Fancy; E, Information; and F, Heroism and Service.

(2) Groups of judges, expert in literature for children, rated the literary quality and the suitability of the selections in each type to be about equal.

(3) The subjects of the experiment, four hundred thirty in number, comprised fifteen classes in five public schools of Yonkers, N. Y. From the results of individual Stanford-Binet Intelligence Tests they were distributed in three groups, equated for time spent in school and grade status.

(4) The thirty selections were arranged in three programs of fifteen pairs each. Seven and a half hours, in three thirty-minute periods each day for a week, were used in reading the paired selections to the children, each child indicating a preference in each pair.

(5) The preferences of each of the three groups, Dull, Average, and Bright, were computed as percentages of choices for each type of material.

* By Miriam Blanton Huber, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 312.

CONCLUSIONS AND APPLICATIONS

With a measure of certainty it may be said:

(1) Marked preferences in different kinds of reading material are shown by dull, average, and bright children. They really do discriminate and express consistent preferences.

(2) A striking similarity exists in the choices of dull, average, and bright children for types of literature, each type representing equally good selections from the available materials of that type.

(3) Dull children like the selections of humor here used less than do the average and the bright, and they like the selections designated as "familiar experience" more than do the children of the higher levels of intelligence represented by the subjects in this experiment.

Less certain conclusions are:

(1) The choices of the dull, in this study, are more influenced by the complexity of the material, and the average are less so; while the bright are little concerned with complexity, within the limits of the material here used.

(2) The choices of the dull are less influenced by literary quality; whereas the average prize it more, and the bright children most.

(3) The choices of the dull are most influenced by the content or subject of the material, the average less so, and the bright children least.

The conclusions applicable to a practical educational program are, in the main, as follows:

(1) Children, at all levels of intelligence, are appreciative of the quality of reading materials. Dull children, as well as those more fortunately endowed in intelligence, appreciate the merit of stories and poems.

(2) To insure the greatest satisfaction to children in reading, attention should be given to the content and subject matter. Children of dull, average, and superior intelligence have distinct and consistent interests in reading which deserve recognition in curriculum making. This is especially important in the education of dull children, whose interests, on the whole, show a striking similarity to those of more intelligent children.

(3) A factor of importance in arranging courses of study in reading is complexity of material. It is necessary that material be graded carefully to the pupil's level of intelligence. Bright children can appreciate material of a wider range of difficulty, but in preparing reading materials for dull children care should be taken to avoid unusual words, confused or involved sentence and paragraph structure, or abstract and subtle ideas.

TEACHING SPEECH IN THE ELEMENTARY SCHOOL *

A Comparative Study of Speech Education in the Elementary Schools of England and the United States

THE purpose of this study was to determine existing needs in the field of speech education in the United States, and to outline ways and means of meeting those needs.

SOURCES OF DATA AND GENERAL PROCEDURE

A study was undertaken of speech education in the elementary schools of both

* By Emma Grant Meader, Ph.D. Teachers College, Columbia University, Contributions to Education, N. 317.

England and the United States. The data for the United States were gathered from courses of study, educational writings, business firms, conferences, and visits to American schools.

The data for England were gathered from the official Handbook of Suggestions for the consideration of teachers and others concerned in the work of public elementary Schools; bulletins, reports of committees, reprints of documents, authorized by the Board of Education for England, or by a local educational committee; educational writings; and visits to English schools.

General procedures included a report on previous surveys of speech education made in American high schools and normal schools; a study of the catalogs of fifty additional normal schools in order to secure further data; and the tabulation of 972 replies received from a questionnaire submitted by the writer on the status quo of speech education in the elementary schools of the United States.

GENERAL CONCLUSIONS FOR ENGLAND AND THE UNITED STATES

(1) Evidences, based on the literature from educational authorities, and on the opinions of business men in England and the United States, show an agreement as to the importance of good speech in life.

(2) These evidences also indicate an agreement as to the strategic position of the elementary school for the achievement of good speech.

(3) The evidences present two distinctly contrasting points of view with regard to what constitutes good speech. American authorities stress the language element in speech and say very little about the voice. English authorities consider the art element in speech very important, together with the scientific knowledge of speech sounds as an aid toward the elimination of provincialisms.

SUGGESTIONS FOR A CONSTRUCTIVE PROGRAM OF SPEECH EDUCATION IN THE UNITED STATES

The study closes with suggestions for a constructive program of speech education in the elementary schools of the United States. These suggestions are developed along the following lines:

1. The development of a more desirable attitude toward good speech an immediate necessity in the United States.
2. The formulation for normal schools of a list of suggested entrance requirements in speech for the intending teacher.
3. The content of suggested courses in speech for the junior and senior years of normal schools in the two-year curricula.
4. The title and content of courses to be given for training special teachers of speech in normal schools having the three- or four-year curricula.
5. Suggestions for improving speech education for teachers in service by

   Getting teachers to see the need for speech work.

   Extension courses in speech education, preferably with university credit attached.

   Demonstration lessons:

   a. In speech improvement for classroom needs.

   b. In clinical and individual cases.

6. Special methods other than those already found in American schools are suggested for speech instruction in the elementary schools as follows:

   a. The use of poetry for younger and older pupils.

   b. The use of oral reading as an aid to good speech.

c. Other specific techniques are described in detail and taken from practice.

7. Further research is suggested along these lines:

The amount and kind of transfer from oral reading to good speech; from good speech in the classroom to good speech elsewhere; from speech drills in school to everyday speech.

The educational level at which international phonetic symbols should be used.

Studies for determining the efficacy of developing bilingual ability in English.

More photographic records to show the proper position of speech agents in action.

More phonographic records made by good speakers.

Additional studies of the possible relation between speech and intelligence.

Additional studies of the possible relation between speech and the emotions.

Additional studies of the possible relation between speech and nervous disorders.

THE ADMINISTRATION OF HOME ECONOMICS IN CITY SCHOOLS *

IT IS considered by those experienced in administration that the success of superintendents of schools, principals, and other administrative officers depends largely upon the coöperation of all their agents, especially the various specialists assigned to the central office. The educational value of the specialists often rests upon their ability to propose and defend recommendations with respect to specialized needs. It was the aim of this study to investigate some present practices in the administration of home economics in city schools, and to determine the measure of desirability of these practices.

As a preliminary study, an investigation was made of 3,000 problems in the home economics field, presented by four groups: (1) general educators and administrators, (2) home economics supervisors and teachers, (3) mothers and homemakers, (4) socially thinking laymen and social workers. On the basis of these problems fifty home economics practices were set up, under these headings: "The Home Economics Program," "Home Economics Curricula and Class Organization," and "Provision for the Home Economics Program." The practices included a study of the place, time allotment, credit, and election of home economics in the elementary and secondary schools, and the offering of home economics to other groups, such as evening school, trade and continuation classes, and classes of boys; the basis of curricula, grade placement of content, the relation of home economics to other subjects and groups, building the course of study, and the class organization; the correlation of home economics with other subjects, the use of the home economics lunch room for educational purposes, the planning of a graded nutrition-health program, the size of the home economics class, the length of the period for home economics, and the homogeneous grouping of home economics pupils; the financing of the program, the housing and equipping, the providing of instructional supplies, and the staffing of the home economics program.

* By Annie R. Dyer, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 318.

SOURCE AND TREATMENT OF DATA

The data in regard to present practice were secured from the reports of city supervisors of home economics and other records. Judgments in regard to desired practice were reported by city supervisors of home economics, state supervisors of home economics, educational specialists, and superintendents of schools. These reporters in all the groups were selected according to regional distribution and size of city. A total of 334 checking lists were used. The data were compared according to the percentage frequency for "present practice," as reported by the city supervisors, and for "desired practice," as judged by the different groups. A careful study was made to determine the reliability of the data. The factors of comprehension of the statements, judgment hesitancy, probable lack of consideration of feasibility in a school system, and the number and distribution of those judging were considered.

CONCLUSIONS

The conclusions were found for six types of practices: "common," "beginning," "desired," "probably not desired," "probably on trial," and "established." Seventeen of the fifty practices were found to be established in part or in full. These included such practices as: home economics being a constant in Grades 7 and 8; equal credit with other subjects given for home economics in high school; naming and defining the subject as "home economics" rather than as domestic science, household arts, or otherwise; providing a home economics library; and the appointment of a supervisor to supervise all the home economics subjects in a school system, rather than a separate supervisor each for sewing and for cooking. The investigator interpreted the data in terms of progress in a school system. The basis for a survey of the home economics program in a city system was set up.

It is hoped that this study will be of assistance to home economics supervisors and school administrators in determining their policies for home economics education; and to educational specialists in training teachers of home economics. The investigation may also serve as an introduction to further research and experimentation.

COST OF LIVING OF TEACHERS IN THE STATE OF NEW YORK *

THE purpose of this study was to ascertain the variations in the cost of living among certain communities of New York State, and then to utilize this knowledge in deriving a technique for correcting the measure of educational need of the communities of the state.

The problem is based upon the assumption that all costs of the state minimum educational program, including those due to variations in costs of living, should be considered in the measure of educational need, as discovered and developed by Mort, and in the equalization program.

The cost of living, as used in this study, means the cost of a carefully defined list of articles and conveniences representing the budget of the single woman teacher living away from home.

* By David P. Harry, Jr., Ph.D. Teachers College, Columbia University, Contributions to Education, No. 320.

GENERAL PROCEDURE

The investigation was divided into five parts: (1) the selection of the articles and services to represent the budget of the teacher; (2) the securing of the prices; (3) the compilation and analysis of the prices into an index of the cost of living in the various communities; (4) the derivation of an index from a shorter list of articles; and (5) the derivation of the technique for correcting the measure of educational need and the application of the index to the various communities.

Seventy-five items were priced in the eighty-five communities returning complete reports. The prices were secured through the coöperation of the state department of education and the school superintendents.

After the computation and analysis of the various indexes, a predicted index was derived by regression equations and best weightings from the actual costs of room rent and of thirteen items of food, with a constant for the remainder of the budget for each community. The use of the predicted index is justified by (1) the reliability of the original data; (2) the ease and practicability of collecting the data; (3) the speed of computing the index; and (4) the close agreement of the predicted index with the total index as shown by the correlation coefficient of $+.974 \pm .004$.

The correction to the measure of educational need was applied only to the salary part (about 75 per cent) of the present basis for state aid, namely $1200 per 'typical' elementary teacher and $1600 per 'typical' academic teacher. The only new data needed to make the practical application to the state aid program are the cost of living index numbers. The formula for correction due to variations in cost of living among the communities is merely three-fourths of the quantity (the index number of the community minus the base index number of the state) times $1200 for each elementary-teacher cost-unit and three-fourths of the quantity (the index number of the community minus the base index number of the state) times $1600 for each academic-teacher cost-unit.

SOME OF THE MAJOR FINDINGS OF THE STUDY

1. The highest total cost-of-living index number is forty per cent higher than the lowest of the 85 communities studied.

2. The total cost-of-living index has correlation coefficients of $+.75$ with the index of the average salaries of elementary teachers, and $+.48$ with population.

3. The controlling factor in the total cost of living is the cost of room rent, with community averages varying from about $2.50 to $8.75 per week. The correlation coefficient of the rent index with the total index is $+.94$.

4. Food index numbers among communities vary only slightly from month to month and from year to year, as is shown by government prices over a period of six years for New York City, Buffalo, and Rochester.

5. The ratios secured by the application of the formula for the predicted index of food with government prices varied only one-half of one per cent over the six-year period.

6. If the lowest index number of the 85 communities were the true state average, nine cities should each receive from $53,000 to $9,000,000 additional state aid due to the variations in the cost of living.

7. The index of the cost of living of teachers can be secured reliably from

only the cost of room rent and thirteen items of food. The indexes of clothing and miscellaneous articles were omitted from the shorter predicted index without greatly affecting the total index.

The writer has recently applied this technique to the measure of educational need of all school districts of the state of Pennsylvania in the new proposals set up by Dr. Paul R. Mort for granting state subsidies to the schools of Pennsylvania.

STATE AND LOCAL ADMINISTRATION OF SCHOOL TRANSPORTATION *

The first part of this study is devoted to the development of a new technique for the measurement of transportation need and the administering of state aid for transportation.

The second part of the study is concerned with the development of a set-up for efficient local administration of school transportation.

PROCEDURE AND RESULTS

A special study was made of local transportation problems in the state of Florida. This was done by the aid of the questionnaire and visitation. The results of this study are reported. An analysis was made of studies on transportation conducted by state departments, higher institutions, the United States Bureau of Education, and commercial concerns interested in bus transportation. On the basis of the status study in Florida, the evidence furnished by other studies and a study of the accounting practices of commercial companies, a cost-accounting system was developed for public school transportation which it is believed lends itself to uniform application. This system was designed to make it possible to analyze transportation costs into the cost units used by commercial companies, and to distribute the expenditures into functional headings similar to those used in the uniform system of educational accounting developed by committees of the National Education Association.

It is believed that this system will furnish to the local superintendent the information necessary for the efficient business management of transportation in his county. The reports to the state department required of the local superintendent will furnish the state bureau of research with material to make significant studies on the business management of transportation. In addition, the state will have evidence necessary for the determination of whether local conditions beyond the control of the community justify a minimum program beyond that determined by the independent variables selected for the prediction of that need.

The liability of school boards in case of accident during transportation was investigated as a legal research.

This first task was accomplished by (1) measuring the minimum program of transportation need in terms of per cent of the average daily attendance transported as related to the independent variable, average daily attendance per square mile. This procedure was validated by establishing a high association between the independent predictive variable and the variable to be predicted, by evidence from the states of Pennsylvania,

* By Roe Lyell Johns, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 330.

Alabama, Florida, New Jersey, and Connecticut.

The function used for the prediction was the simple relation

$$Y_p = \frac{A}{X+K} + B$$

where Y_p is the transportation need as measured by per cent of average daily attendance transported and X, the independent variable, average daily attendance per square mile. It was shown that this function had properties rendering it capable of being fitted to the data of the five states used and it is believed that it is applicable to all the states. (2) The number of pupils in the minimum program was determined by multiplying the Y_p value times the average daily attendance. The number of students for whom aid is to be allowed was determined by allowing the minimum program if the community transported up to or above the minimum and the number it transported if it was transporting under the minimum. (3) The calculated cost of the program was found by determining the per-pupil cost of transportation in the several communities due to factors beyond the control of the community by the technique of correlations and regressions and multiplying by the number of students for whom aid is allowed. The validity of this procedure was substantiated by the establishment of high association between cost per pupil and average daily attendance per square mile from evidence furnished by five states. (4) The state aid allowed was determined by allowing the calculated cost if the actual cost is equal to or above the calculated cost. The actual cost is allowed if it is below the calculated cost. (5) State aid for transportation is to be distributed in combination with the other elements of educational need on the basis of the community's taxpaying ability. This is done by dividing the state aid allowed by the cost per weighted pupil as determined by Mort's technique and summing with the other elements of need.

It was found that different states had different minimum programs of transportation in communities of similar density. It is recommended that each state distribute aid on the basis of its own minimum program as being conducted consistent with its own educational organization, needs and policies. This is discoverable by the fitting of the simple function $Y_p = \frac{A}{X+K} + B$ by the method of approximation or least squares.

AN ANALYTICAL STUDY OF TEACHING IN NURSERY SCHOOL, KINDERGARTEN, AND FIRST GRADE *

IN THIS investigation a scaled analysis was made of specific, observable, teaching acts, typical of procedures in nursery school, kindergarten, and first grade. The purpose of the study was to furnish an objective instrument useful to supervisors and teachers in differentiating strong and weak points in teaching procedures.

The instrument thus constructed directs the attention of observers to everyday experiences of teachers and children in the learning situation. Each general item is scaled on a basis of five points,

* By Winifred E. Bain, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 332.

representing degrees of efficiency, each point being illustrated by descriptions of specific teaching acts. Success in the use of the scale depends upon the ability of raters to match procedures observed with the samples or illustrations given for each scale point.

The scale was used experimentally by eighty supervisors who rated the work of two hundred thirty-one teachers widely distributed throughout the United States and by one hundred twelve graduate students who applied it to the work of seventy-four teachers in the vicinity of New York.

RESULTS

Results are of two kinds: the scale itself and data collected from its use. The validity of the scale as a standard for judging teaching may be assumed from the facts that the scale was designedly made to conform with a list of principles of education generally agreed upon by educational experts to be philosophic bases of good teaching, and that the original scale was used for forty people trained and experienced in methods of teaching and supervision, and was revised on the basis of their criticism.

Data collected from the final experimental use of the scale give it further support. Differences in duplicate ratings made by different judges on the work of the same teachers average well within one-fifth of the scale. The coefficient of correlation between the scores of individual teachers as given by different judges is $+.78 \pm .02$.

The reliability of the scale when measured by the correlation between first and second ratings on fourteen teachers by the same supervisors after a period of four to eight weeks is $+.91 \pm .03$. Correlation between halves of the scale ranged from $+.92 \pm .03$ to $+.94 \pm .01$ on data contributed by different groups of raters.

CONCLUSIONS

Conclusions relate to the practical uses of the scale and to tendencies in present-day teaching as these were revealed by the investigation. The scaled analysis has proved itself to be a fairly precise, workable instrument for evaluating teaching procedures. Since the teaching process is rated, rather than traits of teachers, this instrument stands in contrast to many others previously devised. Its reliability in the hands of presumably average raters is high, and the average agreement between two or more judges on the work of the same teachers is fairly close.

Experience during experimentation suggests that the analysis may be used effectively in training prospective supervisors to observe and evaluate teaching. Further investigation could profitably be made of the effect of the use of the instrument upon the quality of work if teachers and student teachers might have free access to the scale for periodical self-checking. In such practical use of the scale a graphic representation of teachers' scores is recommended in order to make strong and weak points in teaching stand out in relief.

Other inferences may be drawn relative to tendencies in present day teaching. Although these may be debatable, evidence indicates that nursery school procedures have decided strength in the care of physical health of children, and that in this respect kindergartens and first grades are less vigilant. The lowest scores on nursery school teaching are

related to children's creative expression. Average scores on practically all items are higher for nursery school teachers than for kindergarten teachers. Kindergarten teachers average higher than the first grade except on the items related to Reading, Writing, and Number. Kindergarten scores are significantly higher than those for first grade on Habits of Cleanliness in Care of the Room, Arrangement of Room for Creative Work, Creative Use of Materials, and Rest.

COLLEGE NEWS

OFFICE OF THE DEAN

The Board of Trustees at its meeting November 22, elected Mr. Owen D. Young, Chairman of the Board of Directors of the General Electric Company and of the Radio Corporation of America, a Trustee of Teachers College.

The Executive Committee of the Board on October 25 elected Dean M. Gordon Neale, of the University of Missouri, Alumni Trustee for a term of two years.

The following new Faculty appointments are reported:

Charles I. Lambert, M.D., Professor of Psychiatric Education, with a seat in the Faculties of Education and Practical Arts.

H. Shelton Smith, Ph.D., Associate Professor of Education from January 1, 1929. Dr. Smith is at present Director of Leadership Training of the International Council of Religious Education. He received the degree of B.A. from Elon College, North Carolina, and the degree of Ph.D. from Yale.

Lelah Mae Crabbs, Ph.D., Assistant Professor of Education. Dr. Crabbs was formerly head of Psychological and Educational Research in the Merrill-Palmer School in Detroit. She received her B.S., A.M., and Ph.D. from Columbia University, and has in past years been a member of the staff of Teachers College. Her work at present is in connection with the Institute of Child Welfare Research.

Promotions are reported as follows:

Adelaide T. Case, Ph.D., from Assistant Professor to Associate Professor of Education, from January 1, 1929.

Dorothy S. Thomas, Ph.D., from Associate to Assistant Professor of Education.

Dean William F. Russell has been appointed Chairman of the Committee on the Celebration of the 175th Anniversary of Columbia University, and also member of the Advisory Committee on Educational Policy of the University.

A new department, which is headed by Professor Charles I. Lambert, has been formed and is known as the department of Psychiatric Education.

A dinner was given November 16 at the Men's Faculty Club in honor of Professor Charles E. Rush, Librarian of Teachers College, and was attended by a large group of New York librarians and others interested in library work. The committee in charge consisted of Mr. Frank P. Hill, Chief Librarian of the Brooklyn Public Library, Mr. H. W. Kent of the Metropolitan Museum of Art, Mr. H. M. Lydenberg of the New York Public Library, Dr. Williamson, Director of the Columbia School of Library Service, and Dean William F. Russell.

EDUCATIONAL ADMINISTRATION

Professor George D. Strayer recently spent several days in Oklahoma. He gave addresses before the Carter County Teachers' Association at Wilson November 1, speaking on "State Support of Education." He also attended the meeting of the Central Oklahoma Education Association at Edmond November 1, 2 and 3, and addressed the Association.

Dr. Strayer addressed the St. Louis County Teachers' Association at University City, Mo., November 9. His subjects were "Individuality in Education" and "Teaching for Appreciation."

A Southern Conference on Education was held at the University of North Carolina, November 15, 16, and 17. Dr. Strayer attended the Conference, November 17, and presented a symposium on "The Financing of Public Education." This was followed by discussions in which the various state superintendents of the southern states represented in the Conference participated.

Dr. Willard S. Elsbree discussed the recommendations of the Rye Survey at a public meeting in Rye, N. Y., November 8. A major recommendation of this survey is the erection of a new community junior-senior high school to accommodate five hundred pupils.

Dr. George D. Strayer, Dr. N. L. Engelhardt, and Mr. Donald P. Cottrell met with the Florida Educational Survey Commission in Jacksonville, November 22, 23 and 24, to discuss the report of the survey agents which has recently been prepared. Several members of the survey staff met with the Florida Education Association in Orlando on November 30 and December 1, to discuss parts of the survey. Those attending this meeting were: Dr. Strayer, Dr. Engelhardt, Dr. W. C. Bagley, Dr. M. B. Hillegas, Dr. Paul R. Mort, and Dr. Edgar W. Knight, of the University of North Carolina, a member of the Teachers College Summer session faculty.

In the 1928 Yearbook, *The American School and University,* devoted to school buildings and equipment, and published by the American School Publishing Corporation of New York City, Professor Strayer has an article called "Planning School Buildings to Meet Future School Needs," and Professor Engelhardt one on "Research on School-Building Problems—Its Accomplishments and Its Further Field."

Professor Engelhardt October 25th addressed the Cleveland Schoolmasters' Club on "Changing Concepts of Professional Service."

The Report of the Survey of the School System of Newburgh, N. Y., was presented to the Board of Education in that city at its meeting November 12. Drs. George D. Strayer, N. L. Engelhardt and P. R. Mort presented the results of the study. In addition to these members of the staff, Drs. Carter Alexander, W. S. Elsbree, and Lois Coffey Mossman, Mr. Marvin Burr and Miss Jean Betzner of the faculty and ninety-three graduate students participated in the work of this survey. Dr. J. Cayce Morrison, Assistant Commissioner for Elementary Education, represented the New York State Department of Education and collaborated in the work of the survey.

Professors Strayer and Engelhardt are acting as educational advisers to the Russell Sage College of Troy, N. Y., in the selection of the new site on which the college expects to develop its new plant.

School Finance and Business Management Problems, the third in a series of problem books prepared by the members of the department of educational administration, has just come from the press of the Bureau of Publications, Teachers College. The authors are Professors N. L. Engelhardt and Carter Alexander. The volume has an introduction by Professor George D. Strayer. The book is designed for school executives and for college class work in the teaching of school finance and business management and includes state as well as local problems. The 113 problems of this volume appear under the following sections: (1) Fiscal Control and Business Management; (2) Business Practice; (3) Accounting; (4) The School Budget; (5) Revenues and Their Management; (6) Indebtedness and Bonds; (7) Management of Physical Property; (8) Research in Finance and Business Management; and (9) Public Relations. The book contains 526 pages.

Professor Carter Alexander, November 10, presented his final report on the salary schedule to the New Jersey Normal School Association at Atlantic City.

The schedule as formulated by Professor Alexander is based on the salaries paid in the normal schools in neighboring cities and by similar positions in the New Jersey cities in which normal schools are located. A special feature is the arrangement of the eight increments. The first is to come automatically for service. The second is to come only when one-quarter of the training span for that position has been covered. The other increments come in pairs in similar fashion for further years of service and further quarters of training. For teachers who have had all of the maximum training required for a position before entering upon it, the even numbered increments are to come only with the approval of the principal of the school.

This schedule will now be considered by the New Jersey State Department of Public Instruction.

Professor Alexander is making extensive revisions of the pamphlet on "Educational Research" (bibliographic sections) for next summer's new edition. For this work, Mr. C. E. Drake, who has had special library training in the Dartmouth College library, has been appointed student assistant.

The field work of the Chattanooga survey was begun on October 19. Professors Strayer and Engelhardt took a group of graduate students who spent a week collecting the fundamental data to be used in the development of a building program, and also with respect to the possible consolidation of the schools of Chattanooga and Hamilton County. Dr. Strayer's secretary, Miss Ethel Spore, and Miss Evelyn Horton, statistician for the Division of Field Studies, accompanied the group, and had charge of the office in Chattanooga while the field work was in progress.

COLLEGE ADMINISTRATION

Mr. D. P. Cottrell, assistant in College Administration and assistant to the Director of the Division of Higher Education of the Florida State Educational Survey, spent several days recently at

Jacksonville attending the meeting of the Florida State Educational Survey Commission. Mr. Cottrell presented to the Commission the section of the survey dealing with higher education in the State of Florida.

Dr. F. B. O'Rear spoke before the meeting of the Association of Urban Universities Saturday, November 17, on "A Study of the Curricula of Thirteen Lutheran Colleges."

EDUCATIONAL ECONOMICS

The department of Educational Economics is beginning in January the publication of a monthly index, "The Price of School Buildings." The material is to appear each month in the *Educational Digest.* This is an index of the same general type as the index of School Bond Prices which is now appearing monthly in the *American School Board Journal* and the Index of School Supply Prices published monthly by the *Nation's Schools.*

EDUCATIONAL MEASUREMENT AND STATISTICS

Through the courtesy of the Monroe and Burroughs Adding Machine Companies a course of instruction in the use of computing machines has been provided for the members of the three classes in elementary educational statistics. Each of these companies lent three machines to the College, and an instructor was secured for the two-week period beginning November 19. The instructor returned for part of the following week for the benefit of members of the staff who had expressed a desire to profit by this opportunity to learn short cuts and better methods of operating computing machines. One afternoon, Dr. Vera Sanford of the mathematics department of the Lincoln School brought one of her classes to the College to study methods of machine computation. Because of the large number of persons wanting instruction and practice in the use of the machines, it was necessary to maintain an hourly schedule. The machines were in steady use throughout the day and evening hours.

FINE ARTS

Paintings by Mr. Arthur R. Young are included in the current exhibition of the Philadelphia Water Colour Society, Philadelphia, Pa. Drawings and paintings by Mr. Young will be on exhibition at the Pan Hellenic Club, New York City, during January.

Miss Elise Ruffini is giving a series of lectures on Modern Art at the Woman's Club of Upper Montclair, N. J.

Miss Olive Riley is exhibiting at the Opportunity Gallery, Art Center, New York City. Her works were selected by Bernard Karfiol, winner of this year's Carnegie Medal, and are given a prominent position. The Art Center is directed by Alon Bement, formerly of the department of Fine Arts of Teachers College, and recognition by the Opportunity Gallery has now become a mark of distinction among the younger and more progressive artists of New York.

Professor George J. Cox gave the recent Gillander lecture on "The Art and Craft of the Potter," at the Metropolitan Museum of Art, New York City.

EDUCATIONAL SOCIOLOGY

The organization meeting of the Educational Sociology Club was held in

Grace Dodge Room on October 12. Seventy-five students joined the Club at that time. Professor David Snedden gave a talk on "Values," drawing his material and illustrations from literature, arts, and social fields. Professor Daniel H. Kulp told something of the history of the Club and outlined some of the plans for the coming year.

The following officers were elected: President, Marian Randall; Treasurer, M. Taylor Matthews; Publicity Secretary, Katherine Roberts; Social Secretary, Margaret Tilley. The election was not completed at this meeting.

On Saturday, October 27, the Club introduced its season's program by making a regional survey of Manhattan Island.

FRENCH

Professor Des Granges, author of the *Histoire illustrée de la littérature française* and of many other French textbooks, has been appointed lecturer of French literature at the Ecole de Preparation, University of Paris. He will give instruction during the Spring Session to the Teachers College group at the Sorbonne.

About eighteen Teachers College students will take advantage this year of the Graduate Courses in French at the University of Paris. The group will sail from New York immediately after the mid-year examinations in January.

Professor Albert L. Cru has been elected a trustee and member of the finance committee of the French Huguenot Church of New York. This church, the oldest in the city, was founded in 1628, near the present site of Trinity Church, by Walloons from Avesnes (Northern France). These Walloon settlers gave the name of Nouvelle Avesnes to their community, which was, therefore, the first name of New York City. For three hundred years the service has been conducted in French in this church.

HISTORY OF EDUCATION

Professor Willystine Goodsell spoke to the students of Vassar College December 6 on life values and the family.

As a delegate sent by the Social Science Research Council, Professor Goodsell attended a conference on Research in Familial Relations held in Detroit December 14, 15, and 16. The purpose of the conference was to give its members a comprehensive view of research in the field of family relations—not only with regard to investigations already undertaken, but with respect to those which need to be made.

HORACE MANN SCHOOL

The place of art in the life of the child was discussed by Miss Belle Boas before the Child Study Association of America December 3.

A total of $193.25 was collected during the Red Cross campaign by the high school division of the school.

A "Golden Rule" luncheon, composed of cereal, bread and butter, milk and stewed fruit—a meal as near as possible to the type served Near-East child refugees—was eaten in the school cafeteria December 3. The luncheon was sponsored by the Girls League, and was served for thirty-five cents. After the bare cost was deducted, the proceeds were turned over to the Committee on Near-East Relief.

Miss Eleanor Fosdick is president of

the League which includes every girl in the High School, and Miss Elizabeth Briggs is faculty adviser.

A series of exhibits of students' work is being held this year under the auspices of the art department, and includes many examples of individual students' work done outside of class. During the week of December 1 an exhibit of block prints by a junior class was held.

The First Year social studies class in the Horace Mann High School for Girls has become intimately acquainted with modern Egypt through an exhibit of products which the members prepared. Ancient Egypt became real when they constructed the Temple of Karnak and dramatized an original play, "The Book of the Dead."

HOUSEHOLD ARTS

Professor Winchell attended the conference of the Council of Parental Education held in Atlantic City November 14 to 17. She went from there to Washington to attend a meeting of the Advisory Committee on Child Development and Parental Education, in the American Home Economics Association.

Miss Winchell attended the meeting of the Fortieth Anniversary of the Child Study Association in New York City, November 20.

Professor Anna M. Cooley has visited several districts of the New York State Home Economics Association and has spoken at the Rochester and Buffalo district meetings.

She also attended the National Vocational meeting at Philadelphia in December.

The dissertation by Dr. Annie Robertson Dyer has been published by the Bureau of Publications, Teachers College. It is entitled *Administration of Home Economics in City Schools.*

Dr. Gladys Branegan's dissertation will also be published by the Bureau of Publications. It is a study of ten years of progress of home economics teacher training under the Smith-Hughes Act.

HOUSEHOLD ECONOMICS

Professor B. R. Andrews has been asked to serve as a member of the National Committee on Employer-Employee Relationships in the Home, which is organizing research in this field. The committee held a preliminary conference in Washington on December 8.

The Lippincott Press announces for early publication a high school text on *Social Life of the Home* by Miss Bomar of the East North Carolina State Teachers College, in the series of textbooks edited by Professor Andrews.

Professor Andrews will address the College Woman's Club and University Women's Association Thursday afternoon, January 17, and the Philadelphia Home Economics Association in the evening.

THE LINCOLN SCHOOL

The physics and chemistry classes taught by Mr. H. Emmett Brown are trying the experiment of having one project period a week. In this period the student may undertake any application of the science which appeals to him and which has the approval of the instructor. Two days before the period each student fills out a sheet stating his plans and indicating progress, difficulties, etc.

Fourteen general recreational activities are announced by the Lincoln School, to be participated in by parents of the pupils enrolled in the Lincoln and Horace Mann School on Tuesday evenings for twelve weeks. The first term ends February 12.

The activities include dramatic arts, industrial arts, plastic arts, music, photography, painting and drawing, gymnastics and limbering exercises for women, recreational activities for men, recreational activities for women, beginning swimming for men, beginning and advanced swimming for women, general swimming for men and women, and individual or corrective gymnastics for women.

Dr. Fred Strickler has recently published his dissertation, entitled, *The Training and Experience of 480 Industrial Arts Teachers,* through the Bureau of Publications, Teachers College.

Mrs. Ethel Bliss of the Elementary School has an article on "An Elastic Program for Five-Year-Olds," in the October number of *Child Education,* and one on "Why Relax in School?" in the November number of the magazine *The Parent.* Mrs. Bliss gave an address before the Parents Group of the St. James Episcopal Church on the "Child and the Home."

Miss Lillian Stevens, of the kindergarten, gave three addresses before the Warren City, Ohio, Teachers Institute on "The Significance of the Nursery School Movement," "Adventuring with the Kindergarten Child," and "Contributions That the Private School Offers to the Public School."

In the current issue of *Progressive Education,* devoted to the problems of secondary education, Mr. Gordon Mirick discusses the question of "College Entrance Examinations in the Progressive Schools." He also briefly outlines a proposed curriculum for mathematics.

On October 25 and 26 Dr. Jesse H. Newlon, director of the Lincoln School, spoke at the New York State Teachers Association at Schenectady. On November 2 he spoke before the high school section of the Hampden County Teachers Association at Springfield, Mass.

MATHEMATICS

The use of the slide rule and of various other instruments in the teaching of mathematics was explained by Mr. C. N. Shuster to the members of the Eastern District of the New York State Teachers Association October 26. He also gave a talk on the teaching of arithmetic to the teachers of Bound Brook October 25.

MUSIC EDUCATION

The Music Education students, as usual, were deeply involved in the Christmas festivities at Teachers College. The general plan of the celebration was formulated by the class in community music, but the details of carrying it out were assigned to a large number of other classes. There was, as usual, during the week beginning December 17, singing and instrumental music each morning at 8:30 in the corridors of Teachers College, a short community sing at noon, special chapel exercises, singing around the tree and in the cafeteria in the evening, and during the last two days a procession of waits at brief intervals morning and afternoon.

On Tuesday, December 18, a general convocation was held at which in addition to the singing of familiar carols by the entire group, there were brief Christmas greetings by representatives of many of the foreign nations enrolled here. The *Weekly Bulletin* had printed for its final issue of the year a special double inside page on which appeared many of these greetings in the original language followed by a translation and an English phonetic spelling. By this means the greeting not only was given by the foreign student but was reproduced as nearly as possible by the entire audience. At the close, everyone present contributed to a world-wide greeting by expressing at the same time any one of the greetings which particularly appealed to him.

On Thursday, December 20, the special Christmas party of the music education students was held. This included the presentation by various classes—those in junior high school music, in primary music, in elementary appreciation, and in musical history and criticism—of material suitable for Christmas entertainments by each of the four large divisions of the school system—primary, intermediate, and junior and senior high school. These included various presentations of the toy band, a dramatization of the Nutcracker Suite, a Russian Christmas, the reading, with incidental music, of a play entitled "The Christmas Jest," and the dramatization of the old English song, "The Twelve Days of Christmas." Music Education students in the field who desire further details regarding any of these programs may obtain them on request.

At eight o'clock the banquet was held in the Teachers College Cafeteria, which had been entirely rearranged and decorated for the occasion. The attendance was the largest of any year and included not only students of the department, but many of the alumni who are teaching near New York.

On December 19 the members of Beta Gamma chapter of Phi Mu Alpha Sinfonia, which is the Teachers College group of the national musical fraternity, assisted in the installation of Beta Epsilon chapter at New York University. The ceremonies were in charge of Professor Peter W. Dykema, who is the national supreme president. Beta Gamma chapter, which was installed in April, is one of the strongest in the country, a large group of members having been taken in at the first initiation of the year on November 10. The officers of the chapter are Glenn Gildersleeve, president; Dan Nolan, vice-president; Benjamin Swalin, secretary-treasurer; and Walter E. Stoffregen, warden.

On November 1 there were 347 students enrolled in Music Education, making a total of 710 registrations.

NATURAL SCIENCES

Dr. Gerald S. Craig has been participating in the coöperative experiment in curriculum revision in Raleigh, N. C., and in Greenville, S. C. This experiment is under the general supervision of Dr. Thomas Alexander.

Dr. Craig spoke at the Hartford and New London sections of the Connecticut State Teachers Association October 26. He also addressed the Central Association of Science and Mathematics Teachers, which met at the University of Chicago November 30, on "The Science of the Elementary School and Its Relation to the Science of the High School."

At a staff meeting of the teachers of the Manhasset, N. Y., Public Schools,

November 27, Dr. Craig outlined a plan by which a coöperative curriculum study in science might be undertaken with the Horace Mann School.

NUTRITION

During October and November Professor Mary S. Rose filled outside speaking engagements as follows: a talk on "General Nutrition" in a course conducted by Dr. Mandl of the Evander Childs High School for candidates for the New York City Board of Education examinations for those desiring to teach Biology in the New York City High Schools; an address on "Educational Work in Nutrition with Children" before the American Dietetic Association at its annual meeting in Washington, D. C.; and a talk on "Nutrition in the Schools" at a meeting of the Association for the Prevention of Cruelty to Children at White Plains, N. Y.

The Macmillan Company has announced the publication in the near future of the third edition of Professor Rose's *Laboratory Handbook for Dietetics*.

At the December meeting for Better Dentistry of the First District Dental Society of the State of New York, held at the Hotel Pennsylvania, New York City, this department had an exhibit booth on "Food to Promote Better Teeth" in which were shown dietaries for the expectant mother and for children adequate to the forming and developing of good teeth.

This same exhibit with a few changes and additions was loaned the following week to the committee in charge of Health Week at Barnard College.

The methods used in the exhibit are those described in an article entitled "Visualizing Food Values" by Professor Rose, Dr. Margaret Hessler, Miss Hazel Stiebeling, and Miss Clara Taylor in the November, 1928, issue of the *Journal of Home Economics*.

As in previous years this department is again conducting nutrition classes in Public School No. 157, New York City. In addition, Miss Louise L. Engle, assistant to the National Director of the Nutrition Service of the American Red Cross, who is on leave of absence from her post this year to study at Teachers College, is working with the teachers of the school on the development of a course of health lessons, and at their request is giving demonstration lessons in nutrition in the different grades in the school.

Professor Grace MacLeod has recently served as a judge on two contests held by the Nutrition Service of the Bellevue-Yorkville Clinic Auxiliary of the Committee for the Prevention and Relief of Tuberculosis. One was a window display contest in which the grocery stores of the district were invited to compete for prizes for the best window displays of "Foods for Health," and the other a "Health Foods of All Nations Recipe Contest," in which the women of the district were invited to submit recipes for dishes characteristic of their national cookery to be judged for their suitability in children's dietaries.

SECONDARY EDUCATION

A program of supervised practice for critic teachers and high school supervisors is being tried by Professor Maxie N. Woodring in coöperation with Pro-

fessor Franklin W. Johnson and Professor Thomas Alexander. Experienced teachers preparing to be critic teachers and supervisors of high school subjects are assigned to groups of seniors from Barnard College and Columbia College who are preparing to be high school teachers. These advisers guide the work of the teachers-in-training in the selection and organization of teaching materials, in the determination of desirable teaching procedures, in the selection of professional books, magazines, and the like. A series of supervised observations of the work of the teachers-in-training is a feature of the program.

A Secondary Education luncheon was held at the Mens Faculty Club, November 27, to promote acquaintance and friendship between the students and faculty of the department. Those present at the luncheon were the members of the staff, and the cabinet of the Secondary Club, consisting of the officers and one representative from each class in the department.

The meeting was presided over by Professor Elbert K. Fretwell, who introduced John T. Kaemmerlen, president of the club. Plans for the activities of the club for the remainder of the year were discussed.

TEACHERS COLLEGE—NEWS AND EDITORIAL COMMENT FROM THE DAILY PRESS AND MAGAZINES

TEACHERS COLLEGE is more or less in the news—in New York and throughout the country. We are reprinting in this department some of this news and editorial comment. The items which appear here are taken from the New York newspapers or are obtained, in the case of those from other cities, from a clipping bureau. Many interesting things, however, are missed, and if readers of this department see news stories or editorials concerning the College which particularly appeal to them they will confer a favor by sending them to the Bureau of Educational Service, Teachers College. Maybe we shall have seen such items already; but in many cases they will be news to us and to many readers of THE RECORD.—The Editor.

Two Billion Yearly Not Too Much

Teachers College was represented at the first annual Southern Conference on Education held at Chapel Hill November 14, 15, and 16 under the auspices of the University of North Carolina, by Professor George D. Strayer, of the Department of Educational Administration, and Mr. Clyde R. Miller, of the Bureau of Educational Service. Professor Strayer, addressing the conference on school costs, pointed to the rapidly increasing wealth of the country as one indication not only of the country's ability to finance education but as definite proof of the value of education as a basis for national prosperity. Here is part of the *New York Times* account of his address as printed on November 18:

"In 1910 the total expenditure for public education in the United States was approximately $500,000,000," he said, "and in 1926 we spent for the same purpose approximately $2,000,000,000. After making allowances for the change in the purchasing power of the dollar, and increased population, we would still show an increase of 180 per cent."

"As a result of the continued and rapid increase in the income of the people of the United States and the resultant shortening of working hours, one of the serious problems of public education today is provision for that type of education that will enable men and women to use their leisure time to best advantage.

"All too frequently leisure means merely a desire for amusement. Sometimes the net result of time off is a worker less able to perform even his routine duties on account of the use made of his leisure time. The higher forms of recreation must be made available for all workers.

"There is no good reason why those who work in our modern industries should not, by virtue of the education which they have had, get satisfaction in music, literature, and the other fine arts; nor is there any good reason why they may not within the limits of their capacities continue their interest in the humanities and sciences."

The New York *World* (November 19), commenting on Professor Strayer's address, said:

"Professor Strayer does not share the opinion of some students of school finance that per-capita educational expenditures have about reached the maximum which can be attained without risking state and municipal bankruptcy. In spite of its rapid expansion, the outlay for education still consumes only about 2¼ per cent of the national income, and since it tends directly to increase this income it should be regarded as a productive investment whose returns will far exceed the cost.

"While our school bills have grown rapidly in the last decade, our war bills are still much larger. The amount carried in the Federal budget for the current fiscal year to pay for past wars and to prepare for future wars exceeds the total expenditure for public education by 25 per cent. This military expenditure, moreover, is unproductive. And as to the disasters predicted if we continue to expand our school budgets, we have only to point to the huge expansion since 1910 and then ask ourselves if we are poorer on that account. The answer is obvious. We have by no means reached the limit of our capacity to provide still further educational facilities. These will be needed. Education has brought the masses of our people more leisure and they now need still more education to enable them to use that leisure properly."

In an editorial entitled "Schools in a Republic" the Baltimore *Sun* declared that most Americans will agree with Professor Strayer that two billion dollars for school expenditures annually is not disproportionate to America's vast wealth. The *Sun* gave a hearty second to what Professor Strayer said about education for leisure, and added:

". . . one can point in Baltimore to schools and to teachers whose students do them honor in broad outlook, honorable behavior and earnest endeavor. Is this accidental? Surely not. What is taught and how it is taught bring results. And to say this is equivalent to saying that education is not simply a two-billion dollar industry with expert administrators and highly trained operators. There is a spirit behind it which cannot be measured in dollars and which is literally beyond price, for it cannot be bought. It must be earned by deep thought and wise guidance and consistent striving. If school boards, school officials and school teachers are big enough for this responsibility, they will do more than get two billion dollars a year. They will deserve it—and more."

Philosophy of Education Reading Room Is Opened; Bust of John Dewey Is Presented

Students in the Philosophy of Education are finding examination of reference material much more convenient and profitable as a result of the utilization of Room 318 Teachers College as a

special reading room. The books, on open shelves, are easily accessible. Recently, when the room was opened, a bust of John Dewey, by Jacob Epstein, was presented to the department of Philosophy of Education for placement in the room. The bust had been given to Professor Dewey last spring by a number of his friends and former students. At the request of Professor Kilpatrick, Professor Dewey consented to have it placed in the reading room. "What is a man to do with a bust of himself?" asked Dr. Dewey. "It's a sort of white elephant," he laughed. Dr. Dewey attended the presentation of the bust to the reading room. Of this occasion the *New York Times* for November 10 wrote, in part:

Dr. William Heard Kilpatrick, in the presentation speech, commented upon the influence of Dr. Dewey's activities and the influence of his philosophy upon American scholars.

"He is America's greatest living philosopher," said Dr. Kilpatrick, "and must be included among the greatest thinkers of all times. He has in the minds of many changed almost our whole conception of what philosophy is, delivering us from the old puzzles that have formed the stock in trade of the traditional philosophy. He is chiefly responsible for our thinking of intelligence as primarily instrumental. His philosophy has common-sense acceptability and a social bearing which distinguishes it in degree from all other philosophies."

Dr. Dewey's great contribution to education, he continued, is in his development of methods of discipline, methods of instruction and the theories underlying both. Every pupil in the American public schools has been affected by Dr. Dewey's teachings and is able to live a better life because of them, added Dr. Kilpatrick.

"It is not too much to say that his work in education constitutes the most complete grasp yet achieved in solving the problem of how civilization is to be placed on an intelligent and dynamic basis," he declared.

The bust is the gift of a large number of contributors from both professional and business fields, including Supreme Court Justice Oliver Wendell Holmes, Dr. Edwin R. A. Seligman, Clarence Darrow, Owen Lovejoy, Rabbi Stephen S. Wise, David Starr Jordan, and Alice Vanderbilt.

Owen D. Young and Teachers College

Following the announcement on November 22 of the election of Owen D. Young to the Board of Trustees of Teachers College, the New York *Evening World* said editorially:

The election of Owen D. Young as a trustee of Teachers College is in line with the trend of the times in education. He is not a teacher, nor has his distinction been achieved in the line of scholarship. He represents the best there is in the line of industrial progress, and we are living in an industrial age and in a nation in which the industrial forces dominate.

He represents something more than mere efficiency in business, however; he stands for certain business ideals that are none too generally held but which are becoming more and more popular in business circles. The Dean of Teachers College expressed the thought behind the selection when he said that "the relationship between education and the amazing industrial activities which are permitting the American people to enjoy leisure, and in that leisure to develop the highest spiritual qualities, are a feature of American life in which Mr. Young has taken an integral part."

It may be doubted whether the major part of our industrialists to-day are deeply concerned with the spiritual qualities. There is an urge toward the appreciation of spiritual values, however, and no one does more toward inducing such appreciation than Mr. Young. He is, in a sense, both statesman and reformer in industry, and he fits in well with the new theory of education. Such

being the case, his election to the board of Teachers College is significant.

Coöperation in Education

Last summer at Teachers College there was a conference on parental education. Echoes of it are still coming in from various parts of the country. This editorial from the Asheville (N. C.) *Citizen* of November 10 presents admirably the sense and spirit of that conference:

At a recent conference on parental education and public schools held at Columbia University the change in general ideas as to the function of schools was well expressed by different speakers. One of these declared that "every school should become a center for study for adults as well as children."

This opinion is in line with modern progress in ideals of education. More and more is it felt to-day that we should all in one way or another "go to school." The facilities for adult education are constantly being extended and its importance is increasingly stressed. Night and correspondence schools, forums and public debates, commercial and vocational schools, all play a part in this. At the Columbia University conference it was asserted that the education of parents, who should catch the vision of modern educators, is one of the outstanding movements in twentieth century education in the United States. In the same way several years ago President William Oxley Thompson of Ohio State University declared that in his opinion the university existed primarily for the education of the faculty.

It was once thought sufficient if parents sent their children to elementary schools and left the full responsibility for education with the teachers. Thomas Jefferson, Andrew Jackson, Henry Clay, and Abraham Lincoln were well read men because of their zeal for study, and not because of great opportunities for training. But education as a profession is constantly climbing higher and specialized training of all sorts increases apace. Dr. Jesse H. Newlon, director of Lincoln School, Teachers College, Columbia University, declares that now "Parents as well as teachers should be students, not merely of the educative process, but of such fundamental questions as the direction in which American education is to go." Home and school must share the responsibility of our being "conscious as a people of the civic attitude which it is desirable to cultivate."

This attitude assumes that education is a coöperative enterprise in which the whole family participates. Perhaps it signifies that education is working out its problems better than is generally realized. If parents work with children the spiritual ideal may well be upheld and not submerged by purely material or intellectual interests.

Education should promote the ideal of Socrates—that it is for moral advancement as well as for commercial and intellectual progress. It should include a search for and reverent worship of truth. Only in this way can it promote true cultural advancement. And this can be achieved only if all the people, adults as well as minors, participate.

Sarcasm

When a teacher directs sarcasm at a particular student, he not only impairs his own efficiency as a teacher, but he is likely to do more harm than good both to the student toward whom his barbed points are aimed and to the rest of the class, in the opinion of Professor Thomas H. Briggs, writing on the effects of sarcasm in the November issue of the *School Review*.

"Bitter remarks made to pupils with intent to cause humiliation and suffering would find no defense," writes Professor Briggs. "In fact, such remarks are rare even in the worst situations. The trouble lies in the interpretation of intent. What a teacher may intend to be a pleasantry, a witticism, a calmly stated correction or a justified criticism may be and often is understood by the pupils to be sarcasm—ridicule with the purpose of

self-display and the cheapening of others."

Declaring that true sarcasm never obtains the desired effect, Professor Briggs adds:

"Possibly in the great majority of cases a teacher uses sarcasm with intent because he feels himself not wholly master of the situation. He has not been able to arouse interest, to secure adequate learning, or to control discipline. A temptation to be sarcastic should, therefore, be considered a symptom of trouble for which other remedies should be sought."

The New York *Sun* recently reprinted part of Professor Briggs' article.

How to Live with Ourselves

The press release of the United Parents Association of Greater New York carried the following story for November 16:

America is turning to a new type of life, one that will require the individual to know how to take advantage of his leisure time if he would be happy, according to Dr. Harold O. Rugg, who spoke to one hundred men and women at the Hotel Astor November 16, opening the United Parents' Association series of six lectures on 'Parental Problems in Education" scheduled for the winter.

Together with that vision of a new life was portrayed the school curriculum that would efficiently equip the youth of the land for that type of life.

"America has been spending all its time developing a gigantic industrial civilization," Doctor Rugg said. "We have been developing those resources outside ourselves. We have mined our coal, drilled and pumped our oil, erected great buildings, and railroads. In fact, we have built up the greatest economic civilization the world has ever known.

"Now that we have done this, we are finding that our leisure time is increasing, that it does not require as much of our time as formerly to produce the necessities, even luxuries of life. Scientists are predicting that it will not be long until the average man will have to work but four hours a day to produce all the necessities and a moderate proportion of the luxuries."

As a consequence of this development, he pointed out, man would have many hours of the day free. "But educated as we are to-day," he declared, "few of us know what to do with that leisure time. What would we do with more of it? We do not know how to live with ourselves—and that is what we must learn to do if we would be contented and happy."

Too Much Liver

The eating of an undue amount of liver in an effort to frighten off anemia is not only foolish but an economic catastrophe, according to Dr. Walter H. Eddy, writing in *Good Housekeeping.*

"This popular enthusiasm for liver is based on data that is highly experimental," says Dr. Eddy. "Preventive medicine has a place in our daily practice; but for most normal people any one of a wide group of iron-containing foods seems to suffice for maintaining proper blood manufacture.

"A normal individual needs only 1-2000 of an ounce of iron per day," he says. "If his diet is balanced, this small amount will assure the building of adequate red cells and hemoglobin. Scientists agree that common foods contain an adequate amount of iron, among the best of which are spinach, green lettuce, eggs, dried apricots, raisins, navy beans, bananas, orange pulp, graham flour, patent white wheat, flour and bran flakes."

Music—A Safety Valve

That music is a safety valve for the nervously exhausted and the mentally tired was stressed by Professor Peter W. Dykema, speaking on "The Companionable Art of Music" at the Iowa State Teachers Association November 9.

"As a means of expression of those

things which we cannot put into words, it is unequalled," the Des Moines (Iowa) *Register* quotes Professor Dykema as saying. "An example of this is the boy who thinks some girl is the finest and most wonderful person in the world and yet is unable to tell any one about it. The boy can take his trombone and pour out his feelings through it and be perfectly happy.

"Moreover, the youngster who can play a musical instrument is better prepared to earn a livelihood than is any other youngster."

"Children are now learning what to listen for instead of being taught only how to produce music," he continued, in listing fifty songs which should be taught to school children so that they will recognize them as good music. These songs are:

Patriotic—"America," "America, the Beautiful," "Battle Hymn of the Republic," "Dixie," "Star Spangled Banner."

Hymns—"Come, Thou Almighty King," "Lead, Kindly Light," "Faith of Our Fathers," "Thanksgiving Prayer," "Nearer My God to Thee."

Art—Brahms' "Lullaby," Schubert's "Who Is Sylvia?" Mendelssohn's "O Rest in the Lord," Mendelssohn's "I Would That My Love," two parts; Cherubi's "Like As a Father," three part canon.

Christmas—"Deck the Hall," "Silent Night," "Good King Wenceslas," "O, Come All Ye Faithful," "Hark, the Herald Angels Sing."

Rounds—"Lovely Evenings," three parts; "Are You Sleeping?" four parts; "Three Blind Mice," four parts; "Row Your Boat," four parts; "Early to Bed," three parts.

Love—"Annie Laurie," "Believe Me if All Those Endearing Young Charms," "Love's Old Sweet Song," "Drink to Me Only With Thine Eyes," "My Sunshine" ("O Sole Mio").

Home and Country—"Home, Sweet Home," "Home Road," "Carry Me Back to Ol' Virginny," "Flow Gently, Sweet Afton," "Santa Lucia."

Foster Songs—"Old Folks at Home," "Old Black Joe," "Old Kentucky Home," "Oh! Susanna," "Jeanne With the Light Brown Hair."

Humor—"Begone, Dull Care," "Jingle Bells," "Coming Through the Rye," "Climate," "For He's a Jolly Good Fellow."

Harmony—"Levee Song," "Good-by, My Lover," "Southern Memories," (two of these three) "My Bonnie Lies Over the Ocean," "Good Night, Ladies," "Stars of the Summer Night."

Trained Advisers Needed

A trained adviser to aid children in solving the problems of life in the same manner in which the mathematics teacher aids his pupils was advocated for every school by Professor Sarah M. Sturtevant in an interview to the Des Moines (Iowa) *Register* incidental to her attendance at the Iowa State Teachers meeting.

"If the child is trained to make the proper selection of friends, vocation, pleasures and, later, a husband or wife, he or she will be happy.

"I find that most of the trouble in the lives of most persons results from ignorance. They cannot see what is best for them in selecting their friends, husbands, or wives. With improper friends they will be led to do things that rebel against the dictates of their better selves.

"When such a situation is at hand they find that their actions in answering one urge are not in accordance with the actions they really wish they could perform. If they were sure of what they wanted they would never have gotten into such a predicament."

Similar trouble arises when they select the wrong life work, Professor Sturtevant further stressed. "It is not in accordance with their real desires, and, as a consequence, they cannot be happy in the performance of their duties. More and greater trouble will arise if they make the wrong selection when they marry, or if they marry without a proper survey of all the conditions they face."

If You Had a Million Dollars

"If you had a million dollars and did not have to work, how would you spend the major part of your time?"

That is the basic laboratory question, the New York *World* of November 12 reports, in an experiment at Teachers College, conducted by Professor Harry D. Kitson, to determine the interests of workers in their respective occupations. Press wires carried the story pretty well around the country with the result that numerous editorials have appeared concerning Professor Kitson. One from the Claremont (N. H.) *Eagle* is typical:

Professor Kitson is working out a method for testing a worker's interest in his work. So far he has applied his test to 409 teachers. Soon he expects to extend it to ministers, salesmen, machinists and other groups, to determine the relative interest that the nation's wage earners have in their respective jobs.

In response to the question of the teachers taking the test, 25 per cent asserted they would remain teachers. Others declared without hesitation that they would quit the profession at once if they were financially able to do so. Between these two groups, varying degrees of interest were recorded by a scale of measurement which Dr. Kitson has worked out.

One would like to hear more about the degrees in between, and the method by which they are determined. What a worker actually would do if he became suddenly the possessor of a million dollars must, in many cases, be a little different from what he believes he would do in such an event. It must be considerably easier for a person who feels perfectly sure he will never have a million dollars to say he would stick to his job regardless of wealth.

The Baltimore *Sun*, in its comment on the "million dollar test" has a suggestion of its own:

The ambitious professor is eager to know just how enthusiastic "the 47,000,000 wage earners in the country" are about their occupations.

Now is this kind of experiment on the side of noble, helpful science? Suppose the professor succeeds in carrying out his intention and tests everyone of the 47,000,000—how many will he find not ravingly happy with routine hours and responsibility and repetition and all the other things that go to make up a job? He will, we should say, giving a rough estimate, find about 47,000,000. And then what is the professor going to do about it? His "device" that pries into interest can give no advice. It doesn't offer any recommendations. It doesn't provide any new openings. Indeed, it doesn't do one thing except broadcast as a discovery what every man knows in his heart but may prefer, for one or more obvious reasons, to keep secret.

There is only one part of this latest triumph of science, we should say, that gives any promise for the future. One of the professor's questions is, "If you had a million dollars and did not have to work, how would you spend the major part of your time?" Purely in the interest of science and in order to check up on the 47,000,000 answers we suggest that the professor distribute a few of those millions and find out.

To the Waterbury (Conn.) *Republican* it would seem that

Professor Kitson's question is better calculated to develop information about the way people would spend unlimited leisure, if they had it than about the degree of their interest in their occupations. That could be better determined, it would seem, by direct questions to ascertain how workers came to take up their work, what are their own estimates of their interest in it, how they seek to maintain their interest, what they would prefer to do, if anything, and what they do as avocations.

The Brooklyn (N. Y.) *Eagle* said:

Most professional and amateur psychologists will be neither astounded nor surprised by the mental attitude of 75

per cent of the teachers. Alexander Pope's line, "Man never is but always will be blessed" applies equally at least to woman, and its range is universal. "Divine discontent" has been called the source of all progress. Perhaps it is. Human discontent with any actual wage-earning or income-earning occupation is very general. Not always, perhaps not often, does it lead to "slacking." Commonly it urges toward the thrift that means independence.

Dr. Kitson proposes to apply a like test to clergymen, to doctors, to lawyers, to machinists, to day laborers. Not improbably he will find the proportion of each of these who "love their work" and would stick to it if possessing a million dollars considerably lower than the 25 per cent that the teachers show. Comparisons are not invariably odious. Often they are the best key to exact information.

Pure Mush!

This is the heading of an editorial, November 18, in the Brunswick (Ga.) *News* which tells of a Horace Mann School study of children's reactions to motion pictures and states its own opinion:

If, as charged, all of us become largely like children when we attend the motion pictures, then the Hollywood magnates are wasting their money on the great romantic themes and the finest lovers of the screen.

A survey was taken in the Horace Mann School and revealed that the sixth grade pupils as critics regarded the tender passion as so much "mush," and greatly preferred the cowboy films. They explain their attitude by declaring that love is always the same thing and that an intelligent person soon gets tired of it. Evidently the youngsters feel that the grown-ups are not intelligent, and they may be right in that surmise.

Extending the survey to the higher grades, to students from 10 to 17 years of age, disclosed a support of the young pupils in the opposition to love stuff. The boys gave their preference to comedies and were annoyed by the cute type of heroine.

If all this reflects the general opinion of the juvenile audience, and in turn their elders, another revolution will be necessary on the screen. The motion picture was intended for action, and as such one does grow weary of the constant passionate embraces and the kissing. It is usually easy, right at the beginning, to pick out the hero and heroine and know exactly what will transpire in the final reel.

But what is true of the movies is also true of fiction, long and short. Most of it is built around a love motif, although there may be a greater background with larger purposes in view. But the author and playwright seem to think it is essential that romance must be stressed, or dragged in, whether it is needed or not.

Childhood is not interested in the love between man and woman, but wants action. That is shown in their selection of books and stories. Boys demand wars, sports, courage, excitement, adventure. If man is only a boy grown up, perhaps he would like the same type of entertainment on the printed page and on the screen, but must accept the "mush," which appears, at least, to please the ladies.

Love is an important element in life, but it is not by any means the only one. There are plenty of other subjects that could be treated without forever offering the saccharine romance.

Proof of Educational Value of Motion Pictures

That geography and science can be taught school children partly through motion pictures has been proved, according to a detailed report of tests conducted by Dr. Ben D. Wood of Teachers College and Dr. Frank N. Freeman of the University of Chicago. The New York *Sun* of November 15, commenting editorially, says:

It was found that film-taught children

made 33 per cent greater progress in geography and 15 per cent greater progress in science. The tests were applied to 5,500 children who had been given film instruction and to an equal number who had been taught the same material without the aid of the screen.

If properly-planned classroom films can raise pupils' marks, as in this experiment, many failures may be turned into passing marks. At present many children repeat their grades each year. As the expense of keeping a child in school for a year averages $100, the financial saving through the use of films as supplements to textbooks should be considerable.

When Education Pays

As a result of a press account of an address given at South Bend on October 12 by Mr. Clyde R. Miller, director of the Bureau of Educational Service, before the secondary section of the Northern Indiana Teachers Association, the New York *Sun,* under date of November 8, ran the following editorial:

So much has been said about the material value of education that a word of caution against overemphasizing this factor is not out of place. In an address before a teachers' association in Indiana, Mr. Miller not only questioned the wisdom of indiscriminately distributing statistics which purport to show how much a high school or a college education pays in dollars and cents, but challenged the accuracy of such figures. He said:

"There is scant evidence that after one has received schooling beyond a certain point, say the ninth grade, he gains anything in dollars and cents by continuing his schooling. Certainly there is a point of diminishing returns in formal education. If this were not so our Ph.D.'s would be millionaires instead of poor, worried gentlemen, wondering how they are going to pay next month's rent. . . .

"As teachers we are likely to say that all success in life must be based on education. Omitting elements of luck, of having chosen good parents, that is true, but it certainly does not mean formal education in schools. It did not mean it for Henry Ford; it did not mean it for Thomas A. Edison. Jack Dempsey had little schooling, and he's worth millions. Tunney's knowledge of Shakespeare cut no figure in his financial success."

Mr. Miller explained that his remarks were not to be construed as a deprecation of formal schooling. He pointed out that as the educational level of a community rises its standards of material prosperity also are likely to improve. But his words have significance for those parents who may be forcing a lad with the natural endowments of a successful mechanic to prepare for inevitable unhappiness and perhaps tragic life failure as a dissatisfied practitioner of one of the white collar callings.

Education and Wages

As a result of a news story quoting Professor Harold F. Clark, of Teachers College, on the economic aspects of public education in America, the New York *Herald Tribune* of October 26 ran the following editorial, entitled "Education and Wages":

The belief of Dr. Harold F. Clark, of Teachers College, that "what will have to come in this country through the process of social evolution will be the establishment of state commissions to regulate education," sounds less extravagant to those conversant with the problems of higher education in this country than it may to the layman. But before resort is had to any such official curtailment of the freedom of American boys and girls to seek the schooling their ambition dictates let us hope the good sense of the community will assert itself to find a solution without state interference.

At present it is obvious that a conspiracy exists to crowd our colleges and universities with indigestible material. This is having a depressing effect both on the institutions themselves and on the professions into which they pour their graduates. As Dr. Clark points out, "there are 1,000,000 students working

to-day toward professions with room all told for 1,800,000 persons." The result is an increasing oversupply of recruits, a decrease in individual earnings, and a progressive pressure for that reason against professional standards. Meanwhile, the institutions, in their attempt to stretch their facilities to accommodate the hordes of students that are swamping them, have been forced more and more into becoming degree factories, into watering their curricula with courses that scatter their educational energies, and into impersonalizing the relation between faculty and student body.

The conspiracy mentioned had its inception long before the war and the subsequent popular stampede for the academic stamp. Colleges then were competing for students and began issuing propaganda to show the advantages of a degree in dollars and cents to the wage earner. Not only have they succeeded beyond their fondest dreams in "selling" the idea to the youth of the land, but apparently they have overcome as well the initial resistance of employers of labor. Instead of growling, as so many employers used to, at the unfitness of the college graduate for industry, any number of them to-day discriminate in favor of the applicant for a job who has been to or through college.

This type of propaganda, thanks to the momentum of its initial urge, is still flowing forth, but in diminishing volume. Dr. Clark thinks it high time it was counteracted. Through the establishment this fall of a new division of study in Teachers College known as "economics of education," he believes he can gather statistics to prove the fallacy of the reasoning on which it rests. In any event, the country will be the gainer for knowing precisely on what it bases its amazing faith in the alchemy of a higher education. Dr. Clark deserves Godspeed.

ALUMNI ACTIVITIES

TEACHERS COLLEGE ALUMNI ASSOCIATION OFFICERS

President: Mr. Frank Pickell, Superintendent of Schools, Montclair, N. J.

First Vice-President: Dr. Fannie W. Dunn, Assistant Professor of Education, Teachers College.

Second Vice-President: Dr. Bessie Lee Gambrill, Associate Professor of Elementary Education, Yale University, New Haven, Conn.

Recording Secretary: Miss Mary Lewis, Teacher in Horace Mann School, Teachers College, New York City.

Corresponding Secretary: Miss Katherine I. Sherwin, Executive Secretary of Student Organizations, Teachers College.

Treasurer: Dr. R. G. Reynolds, Principal of Horace Mann School, Teachers College.

Members-at-Large: Mr. Frank Morey, Supervising Principal of Schools, Camp Hill, Pa.

Miss Effie Taylor, Professor of Psychiatric Nursing, School of Nursing, Yale University, New Haven, Conn.

Miss Marion Sheridan, 711 Orange Street, New Haven, Conn.

Alumni Trustees:

Miss Mercy J. Hayes, 301 American State Bank Building, Detroit, Mich.

Dean M. G. Neale, School of Education, University of Missouri, Columbia, Mo.

Alumni Office: Russell Hall, Teachers College, 525 West 120th Street, New York City.

Address all communications to Katherine I. Sherwin,
Corresponding Secretary, Teachers College, New York City.

SECRETARY-TREASURERS OF TEACHERS COLLEGE CLUBS

Africa—South Africa Club
Dr. E. G. Malherbe
University of Cape Town
Cape Town, South Africa

Alabama—State Club
Miss Agnes Harris
Auburn, Ala.

Arizona—State Club
Miss Minnie Porter
% Board of Education
Phoenix, Ariz.

Arkansas—State Club
Mr. H. G. Hotz
University of Arkansas
Fayetteville, Ark.

CALIFORNIA—SOUTHERN CLUB
Miss Lela W. Aultman
6811 Leland Way
Hollywood, Calif.

CHINA—EAST CHINA CLUB
Mrs. Nita M. Stallings
Soochow, Ku, China

CONNECTICUT—NEW HAVEN CLUB
Miss Frances Terrill
100 Whalley Avenue
New Haven, Conn.

CONNECTICUT—STATE CLUB
Dr. Raymond Mosher
State Normal School
New Haven, Conn.

GEORGIA—ATLANTA CLUB
Miss Isabel Dew
Head, Mathematics Department
Fulton High School
Atlanta, Ga.

GEORGIA—STATE CLUB
Miss Leila Bunce
Director, Home Economics
Fulton High School
Atlanta, Ga.

INDIANA—SOUTH BEND CLUB
Miss Mamie E. Kerner
115 North William Street
South Bend, Ind.

INDIANA—STATE CLUB
Miss Margaret Gillum
State College for Teachers
Terre Haute, Ind.

KANSAS—WICHITA CLUB
Miss Christina Rosendale
Wichita High School
Wichita, Kan.

LOUISIANA—STATE CLUB
Prof. Homer L. Garrett
Louisiana State University
Baton Rouge, La.

MAINE—STATE CLUB
Mr. Frank D. Rowe
Supt. of Schools
Warren, Me.

MARYLAND—STATE CLUB
Miss Lucetta M. Sisk
Glyndon, Md.

MICHIGAN—ANN ARBOR CLUB
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Couzens Hall
Ann Arbor, Mich.
Treasurer
Miss Edith Bader
548 Thompson Street
Ann Arbor, Mich.

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Mrs. D. R. Dudley
Asst. Superintendent of Schools
Battle Creek, Mich.

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Recording Secretary
Miss Zaide L. Voorheis
Northern High School
Detroit, Mich.
Treasurer
Miss Jessie Wedin
Detroit, Mich.

MICHIGAN—GRAND RAPIDS CLUB
Mrs. Mabel Hutchings Bellows
Kensington School
Kensington and Curve Sts.
Grand Rapids, Mich.

MICHIGAN—NORTHERN MICHIGAN CLUB
Mr. Sidney Herring
401 Front Street
Marquette, Mich.

MINNESOTA—STATE CLUB
Miss Anna Sand
Principal Thos. Lowry School
Minneapolis, Minn.

MISSISSIPPI—STATE CLUB
Mr. Joseph E. Gibson
McComb, Miss.

MISSOURI—KANSAS CITY CLUB
Miss Madeleine Farley
805 East 30th St.
Kansas City, Mo.

MISSOURI—ST. LOUIS CLUB
Mr. H. P. Stellwagen
Board of Education
St. Louis, Mo.

MISSOURI—STATE CLUB
Miss Clara Evans
E. C. White School
Kansas City, Mo.

NEW YORK—BUFFALO CLUB
Miss Agnes McCarthy
Technical High School
Buffalo, N. Y.

NORTH CAROLINA—STATE CLUB
Mr. L. R. Johnson
111 Steele Street
High Point, N. C.

OHIO—AKRON CLUB
Miss Clara Barker
614 West Market Street
Akron, O.

OHIO—ATHENS CLUB
Mrs. E. B. Smith
University of Ohio
Athens, O.

OHIO—CINCINNATI CLUB
Mr. E. D. Roberts
Asst. Superintendent of Schools
Cincinnati, O.

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1131 Clifton Blvd.
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Collinwood High School
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Miss Isabelle Hazen
Franklin Apartments
Kent, O.

OHIO—TOLEDO CLUB
Miss Grace Gordon
Riverside School
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OKLAHOMA—STATE CLUB
Miss Lucy Helen Meacham
Director of Grades
Oklahoma City, Okla.

PENNSYLVANIA—HARRISBURG CLUB
Miss Anna P. Harris
1009 N. 16th Street
Harrisburg, Pa.

PENNSYLVANIA—PHILADELPHIA CLUB
Miss Florence Turner
Drexel Institute
Philadelphia, Pa.

PHILIPPINE ISLANDS
Mr. Gabino Tabuñar
Bureau of Education
Division of Bataugas, P. I.

TEXAS—STATE CLUB
Miss Evalina Harrington
Primary Supervisor, Public Schools
School Administration Building
El Paso, Texas

VERMONT—STATE CLUB
Miss Mary B. Sullivan
Normal School
Castleton, Vt.

VIRGINIA—STATE CLUB
Mr. C. B. Givens
4010 West Street
Richmond, Va.

WEST VIRGINIA—STATE CLUB
Miss Wilma C. Spears
Dept. of Education
Marshall College
Huntington, W. Va.

WISCONSIN—STATE CLUB
Miss Josephine Maloney
2914 Cedar Street
Milwaukee, Wis.

PRESIDENTS OF CLASSES

CLASS OF 1916
Miss Mildred Memory
1 Kermit Road
Maplewood, N. J.

CLASS OF 1917
Mrs. Hazen Hoyt
3558 65th Street
Woodside, L. I.

CLASS OF 1918
Mrs. Louise Holbrook Baldwin
1669 Columbia Road
Washington, D. C.

CLASS OF 1919
Mrs. Joseph M. Couse
408 Asbury Park Avenue
Asbury Park, N. J.

CLASS OF 1920
Miss Ruth Taft
294 Macon Street
Brooklyn, N. Y.

CLASS OF 1921
Miss Margaret Briggs
1505 Jefferson Avenue
Scranton, Pa.

CLASS OF 1922
Miss Eva Wagner
Lincoln School
425 West 123rd Street
New York City

CLASS OF 1923
Miss Grace Ely
6 Kendall Green
Washington, D. C.

CLASS OF 1924
Miss Sallie Serson
34th and Chestnut Streets
Philadelphia, Pa.

CLASS OF 1925
Miss Helen Warren
The Garrison Forest School
Green Spring Valley
Garrison, Md.

CLASS OF 1926
Miss Yvonne Fassler
542 Second Avenue
Pelham, N. Y.

ALUMNI NOTES

Mary Lichthardt (B. S. 1923) is teaching at Stanford Junior High School, Sacramento, Calif. She has recently had published in *Herald of Peace,* Lemoore, Calif., "An Ode to Dr. David Starr Jordan's Plan for World Peace."

Ethel B. La More (A.M. 1927) is supervisor of student teachers in the department of foreign languages of the Central State Teachers College, Mount Pleasant, Mich. She was formerly dean of girls, High School, Hastings, Mich.

Josephine Montague (A.M. 1928) is supervisor of student teachers in the department of mathematics of the Central State Teachers College, Mount Pleasant, Mich.

John L. Goble (A.M. 1926) is principal of the Holmes High School, Covington, Ky.

H. F. Kilander (A.M. 1925) has just returned from Sweden, where he spent five months in the study of science education in the secondary schools of that country.

D. T. Ferrell (A.M. 1926) is professor of education, Eastern Kentucky State Teachers College, Richmond, Ky.

George W. Ferrell (A.M. 1928) is professor of English, Bluefield College, Bluefield, West Va.

Ellis M. Duitch (A.M. 1927) is director of athletics and science in the Academy High School, New Concord, Ohio.

Myra L. Luce (B.S. 1926) is dean of women and assistant in physical training, Glassboro State Normal School, Glassboro, N. J.

ALUMNI HOMECOMING DAY

A conference to which the alumni will be invited is being planned for the early spring. Further announcement will be in the TEACHERS COLLEGE RECORD of February.

TEACHERS COLLEGE CLUB OF KANSAS

The Wichita Teachers College Club of Kansas held a luncheon meeting at the time of the State Teachers Association at Hutchinson. Sixty members and their friends gathered at the Rorabaugh-Wiley Tea Room, where Superintendent L. M. Mayberry of Wichita, president of the club, presided. Reservations and arrangements were made by the secretary, Miss Christena Rosendale, head of the department of social studies of Wichita High School, East.

Dr. Herbert B. Bruner brought the latest word from Teachers College with interesting reports of the year's activities among faculty and students. Recent research and experimentation in this country and Europe were called to the attention of the group and opportunities for participation presented.

The next meeting of the club will be held in May when officers for the coming year will be elected and plans made for another guest speaker from Teachers College.

TEACHERS COLLEGE CLUB OF MINNESOTA

The new officers for the Teachers College Club of Minnesota for 1929 are George A. Selke, Teachers College, St. Cloud, Minn., president; and Miss Anna Sand, Principal Thos. Lowry School, Minneapolis, Minn., secretary and treasurer.

RECENT ALUMNI APPOINTMENTS

[*This list is continued from the December* RECORD.]

Padgett, Ina—Associate professor of home economics, Pennsylvania State College, State College, Pa.

Page, Frank R.—Headmaster, Great Neck Preparatory School, Great Neck, L. I.

Palmer, Grace Margaret—Associate professor of art, State Teachers College, Harrisonburg, Va.

Parker, Ruby M.—Head of home economics department, Marsh Foundation School, Van Wert, O.

Patterson, William M.—Professor and head of romance language department, Mount Holyoke College, South Hadley, Mass.

Peeler, Virginia—Research secretary, vocational guidance department of the School Board, New Orleans, La.

Pence, Helen M.—Dean of women, State Teachers College, Wayne, Neb.

Pierce, Martha—Assistant professor of English, College of the Pacific, Stockton, Calif.

Pider, Myrtle Z.—Teacher of English, Irving College, Mechanicsburg, Pa.

Pittman, Blanche—Principal of All Saints School, Sioux Falls, S. D.

Pitts, Mary A.—Teacher of the fourth grade, First Street School, South Orange, N. J.

[*Continued in February Record*]

ALUMNI ASSOCIATION PRIMARIES 1929-1931

Important Notice

Nomination for Alumni officers will be made only by means of the nomination blank on page 405. No individual nomination blanks will be sent out.

TO MEMBERS OF ALUMNI ASSOCIATION:

It is again our privilege and our responsibility to nominate an Alumni Trustee. This year we shall nominate a woman to represent the Alumni Association on the Board of Trustees of Teachers College.

The following alumni have already held or are holding the office of Alumni Trustee:

Dr. David Snedden.....1914-1916
Miss Lida Lee Tall.....1915-1917
Dr. Lotus D. Coffman....1916-1918
Miss Valentine Chandor...1917-1919
Dr. Milo B. Hillegas.....1918-1920
Dr. Agnes L. Rogers.....1919-1921
Dr. Frank P. Graves.....1920-1922
Dr. Lida B. Earhart.....1921-1923
Dr. Albert B. Meredith....1922-1924
Miss Roxana Steele.....1923-1925
Dr. Edwin Broome.....1924-1926
Miss Mercy J. Hayes.....1925-1927
Mr. Jesse Homer Newlon..1926-1928
Miss Mercy J. Hayes.....1927-1929
Dr. M. G. Neale.....1928-1930

We shall also make nominations for the offices of President, Second Vice-President, Corresponding Secretary, and Treasurer. In order to have a democratic organization we must have a large vote. Let us make these nominations represent the desire of the Alumni Association as a whole. This means that each one of us must have a part. Fill out and sign the accompanying blank and mail to me at Teachers College, 525 West 120th Street, New York City, not later than January 31, 1928.

We need your nominations. Send them today.

Sincerely yours,
KATHERINE I. SHERWIN,
Corresponding Secretary

VACANCIES IN OFFICES OF ALUMNI ASSOCIATION

Directions for Filling Out Nomination Blank

The vacancies in the offices of the Alumni Association to be filled this year are: Alumni Trustee (woman), President, Second Vice-President, Corresponding Secretary, and Treasurer.

Election will be for a term of two years, beginning April 1, 1929. Nominations for these offices may be made on the accompanying nomination blank by any Teachers College Alumni Club or by any ten members of the Association acting conjointly. Tear out the blank, sign it, have nine other members of the Association sign, then return it to the Corresponding Secretary. *Nominations must be received in New York on or before January 31, 1929, on the blank provided.* Only members of the Alumni Association whose dues are paid for the current year are eligible to nominate officers or to vote.

After the nominations have been received and canvassed by the Executive Committee, a ballot will be prepared and published in the March number of THE RECORD. The returns will be canvassed by the Executive Committee and reported in the May number of THE RECORD.

It is important that each one do his or

her part as an active member of the Association in nominating candidates who will be able to render the highest type of service to the Alumni and to the College. The nomination of a Trustee of Teachers College is especially important. The College needs the benefit of your best judgment. Fill out the nomination blank at once, have it signed by nine other members, and mail it to the Corresponding Secretary, Teachers College Alumni Association, 525 West 120th Street, New York, N. Y.

The officers whose terms will expire April 1, and for whose positions you are now asked to make nominations are as follows:

Alumni Trustee, Miss MERCY J. HAYES, 301 American State Bank Building, Detroit, Mich.

President, Mr. FRANK PICKELL, Superintendent of Schools, Montclair, N. J.

Second Vice-President, Dr. BESSIE LEE GAMBRILL, Professor of Education, Yale University, New Haven, Conn.

Corresponding Secretary, Miss KATHERINE I. SHERWIN, Teachers College, Columbia University.

Treasurer, Dr. R. G. REYNOLDS, Principal of the Horace Mann School, Teachers College.

IMPORTANT NOTES

1. Nominations for the above offices may be made by any chartered Teachers College Club, or by any ten members of the Alumni Association acting conjointly.

2. Any person who holds a degree or a professional diploma from Teachers College and who is not in the pay of the College or of Columbia University may be eligible for nomination as Alumni Trustee.

3. The accompanying form does not constitute the casting of a vote or ballot, but is merely a nomination.

TEAR ALONG THIS LINE

NOMINATION BLANK 1929-1931

Date.....

TO THE EXECUTIVE COMMITTEE:

We, the undersigned, active members of the Alumni Association of Teachers College, hereby nominate the following persons to be voted upon in the coming election:

For PRESIDENT

.....

Address .....

For SECOND VICE-PRESIDENT

.....

Address .....

For CORRESPONDING SECRETARY

.....

Address .....

For TREASURER

.....

Address .....

For ALUMNI TRUSTEE (Woman)

.....

Address .....

In our judgment the persons named above are fitting candidates for the offices designated.

(To Be Signed Below by Ten Members of the Association)

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....
8. .....
9. .....
10. .....

This blank properly filled out must reach the Corresponding Secretary of the Alumni Association, Teachers College, 525 West 120th Street, New York, not later than February 5.